

# FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

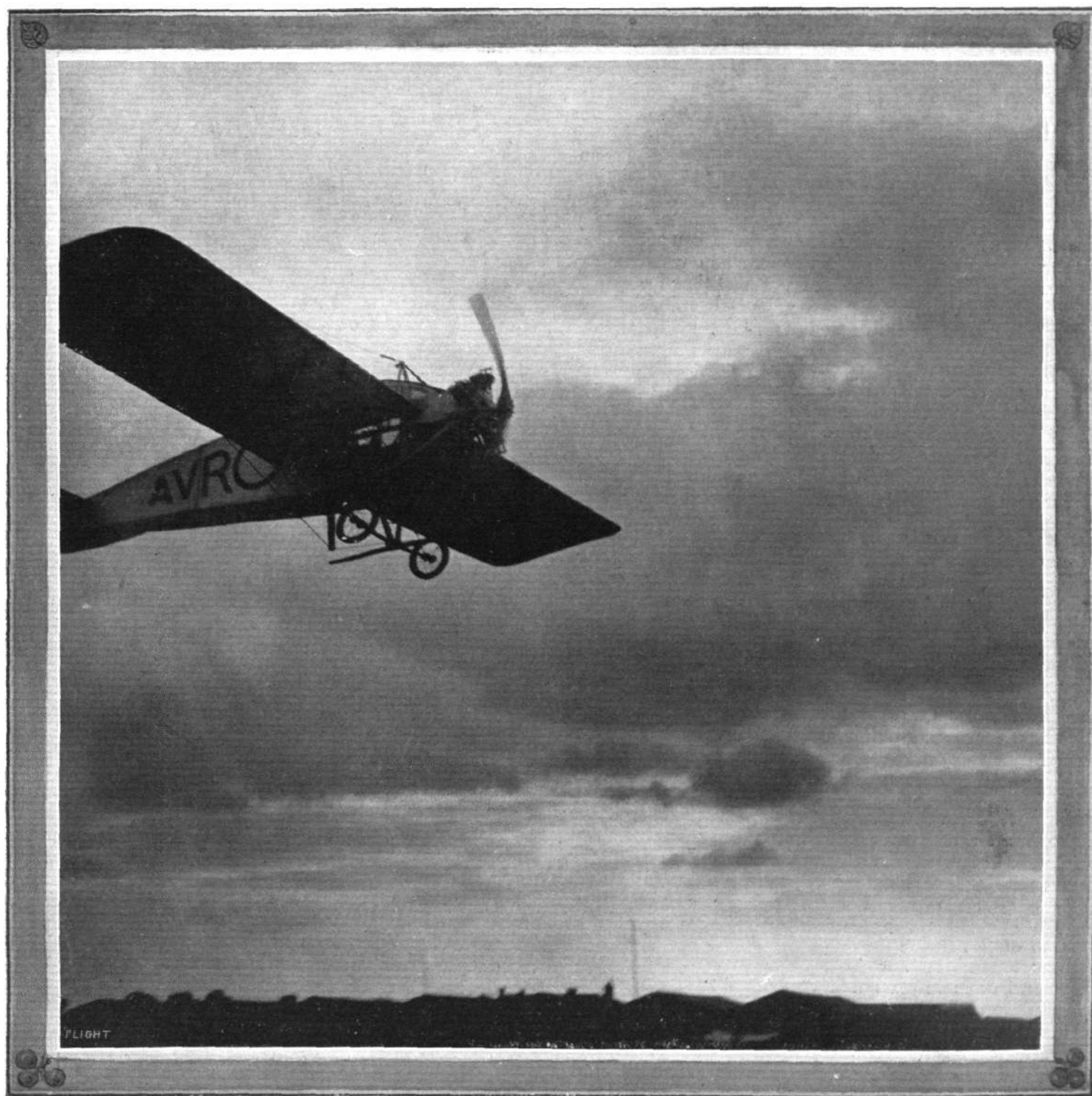
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AN IMPRESSION OF SPEED.—A genuine photograph of the new enclosed Avro monoplane, which was recently flying at Brooklands, secured by FLIGHT photographer in one-thousandth part of a second.

# EDITORIAL COMMENT.

An Arch-Disciple of Flight.

Seldom have we read anything more graphically interesting than Mr. H. G. Wells' article in last Monday's *Daily Mail* recounting the experience of his first flight with Mr. Grahame-White at Eastbourne. It is not that his experience was full of adventure or even that it was more than just a little exciting. Nothing happened, but that pilot and passenger indulged in quite a commonplace sort of trip out to sea and back again—the kind of thing that is being done almost times without number every day of the week. But there is something fascinating in the very idea of the famous novelist making his first trip in the air. Not that there is anything sensational nowadays in the most famous of personages trusting themselves to the most uncertain of all elements, for the edge of our appetite has been worn off long since by the spectacle of eminent politicians, soldiers, sailors and even royalty itself making flights almost as a matter of course. But Mr. Wells appeals to us as being by way of in a class by himself for he, above all of our contemporary authors, has figured as an arch-disciple of aviation. At the time when Lilienthal and Professor Langley were making their experiments, Mr. Wells was one of the very few journalists of his day who had the courage to set down in cold print his conviction that in his own lifetime he would see men fly. And at that time it required more than ordinary courage to profess belief in a future conquest of the air. He himself says that he suffered no inconsiderable loss of reputation as a consequence of opinions—those were the days when every experimenter in dynamic flight was regarded as a hopeless and dangerous lunatic, so we are quite content to believe what Mr. Wells has told us. However, he never seems to have wavered, and the fascination of the air has manifestly been upon him all through the years since first he became interested. No novelist of our own or any time has so let his imagination run riot in the air. His "War in the Air" was a case in point, to all appearance, as wildly far-fetched a work as could possibly be imagined at the time it was written—but who would dare to say that its possibilities are overdrawn in the light of even our present knowledge? But let us pass on to find Mr. Wells once more in prophetic mood.

"We ancient survivors of those who believed in and wrote about flying before there was any flying used to make a great fuss about the dangers and difficulties of landing and getting up. We wrote with vast gravity about 'starting rails' and 'landing stages,' and it is still true that landing an aeroplane, except upon a well known and quite level expanse, is a risky and uncomfortable business. But getting up and landing upon fairly smooth water is easier than getting into bed. This alone is likely to determine the aeroplane routes along the line of the world's coast-lines and lake groups and water-ways. The airmen will go to and fro over water as the midges do. Wherever there is a square mile of water the waterplanes will come and go like hornets at the mouth of their nest."

There is something almost wonderful in these few words of prophecy. And yet they are commonplace enough in all conscience—they are not even new, for it is no more than we ourselves have said not once but many times. It is when we carry our memory back fourteen or more years and remember the faith of the

man in what was then an absolutely discredited line of research and his later creations of the imagination, all evincing that same almost pathetic faith and almost carrying conviction by the very forcefulness of his writings, extravagant as they might have seemed, and then realising that he is now dealing with a future in which there is nothing of imagination but only cold-drawn probability—nay, certainty. Even in the air there is little enough of romance left to us in these matter-of-fact days and we feel, as it were, under a debt of gratitude to Mr. Wells for removing the drab mantle, even for a moment, that seems to envelope all our doings, enabling us to see that after all the romantic is not altogether dead but simply needs the discerning eye to realise its presence.

Aviators and the Army Manœuvres.

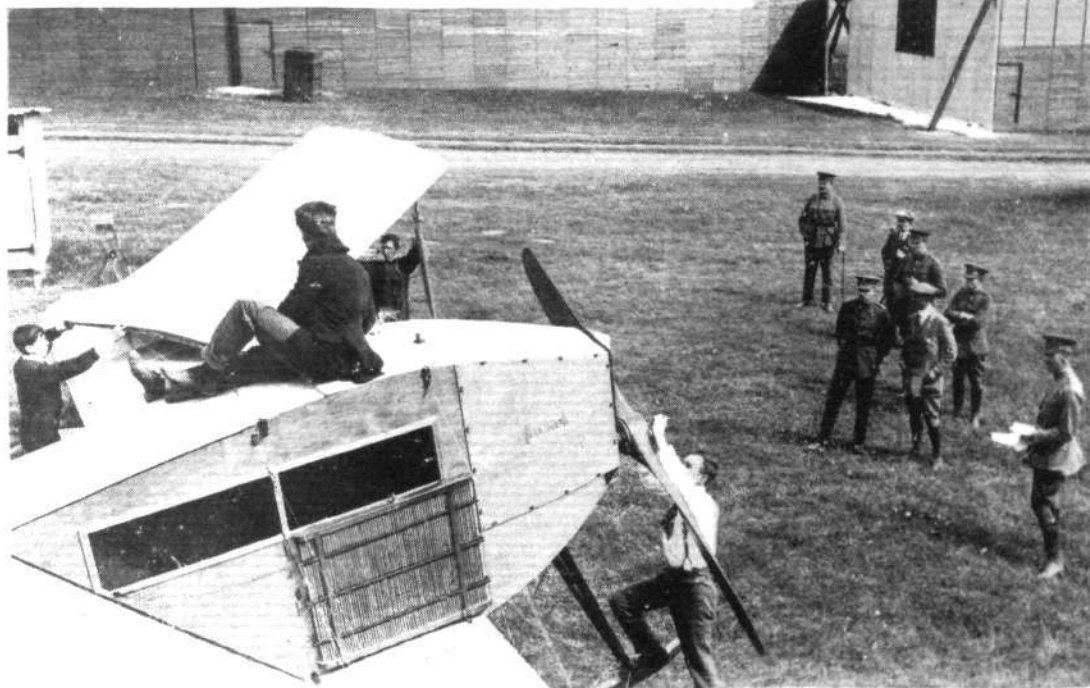
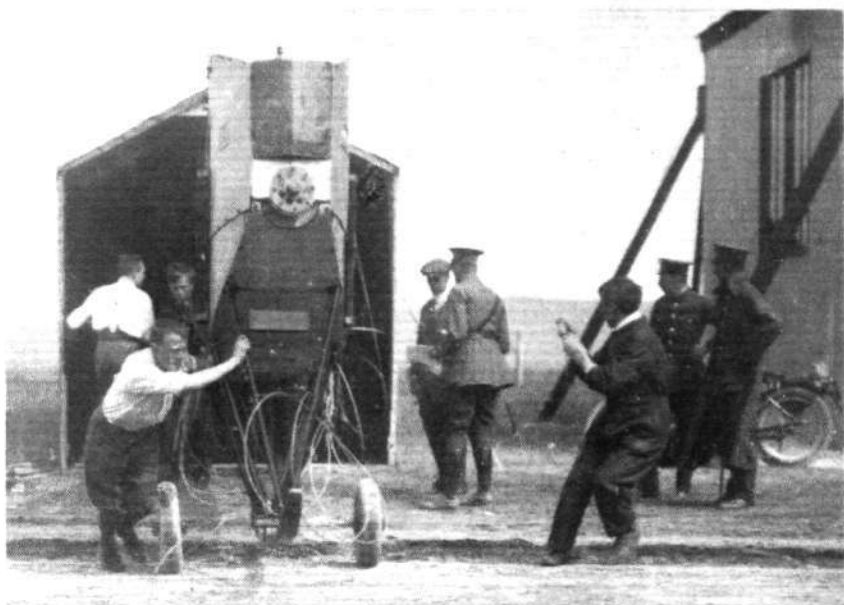
The letter of the R.Ae.C. on the subject of flying over the Army Manœuvre ground during next month's operations, published in our issue of last week and sent out to every pilot holding the Club's certificate, seems to us to be fit subject for comment. We need hardly say that we entirely approve of the letter and its tone. Moreover, the Army Council is absolutely right in taking the view it does of the presence within the limits of the manœuvre area of aviators who have no lot or part in the operations. The reasons assigned are perfectly good reasons, and we trust and believe that they will be recognised as such by unattached aviators who might possibly be impelled by curiosity to visit the manœuvres by air.

The main point, however, which strikes us is the official recognition implied by the request of the Army Council to the Club to issue this notification to its certificated pilots. It would have been just as easy for the Council to have made application for the necessary action to be taken to bring into force the provisions of the Aerial Navigation Act and to have thus had the area of operations legally placed "out of bounds" to all but aviators employed by the military authorities. Instead, however, of this being done, the Council has evidently assumed that the Club has in fact that authority upon which we laid stress at the time the Government passed the Act to which we have already referred. Then we pointed out that legislation was entirely superfluous at this early stage of the movement, for one reason because anything in the way of laws dictated by panic might easily by their incidence inflict lasting injury on the future of aviation and that it was especially undesirable and unnecessary to legislate, inasmuch as the Royal Aero Club possessed ample power of control and, if need be of punishment, of aviators holding its certificate who might transgress the amenities. It is very evident that the Army Council recognises that these contentions are right and is content to rest its faith on the Club's authority and the good sense of the pilots. In a sense, aviation and aviators are placed on their honour and, that being the case, we trust that it is unnecessary to appeal to the latter to loyally observe the Club's behest.

## Aerial Legislation in France.

THE Prefect of Police of Paris has just issued an order forbidding aeroplanes to land within the limits of the city, or at less than 500 metres from the nearest buildings in the Communes of the Department of the Seine, except in flying grounds authorised by the

Administration. Flying machines are also forbidden to fly over Paris or the Communes of the Department of the Seine except at such a height that should the motor stop they could *vol plané* to ground outside the city. In case of a descent in prohibited area the pilot must wait until authorised to start by the proper officials.



THE MILITARY AEROPLANE COMPETITION.—The Avro biplane being assembled. This machine won the Assembling Test by being prepared for flight in 14 mins. 30 secs. Inset are the designer and pilot.



# THE ARMY TRIALS AND SOME REFLECTIONS.

By Our Technical Editor.

## "X."—A NEW CONSTANT FOR AEROPLANES.

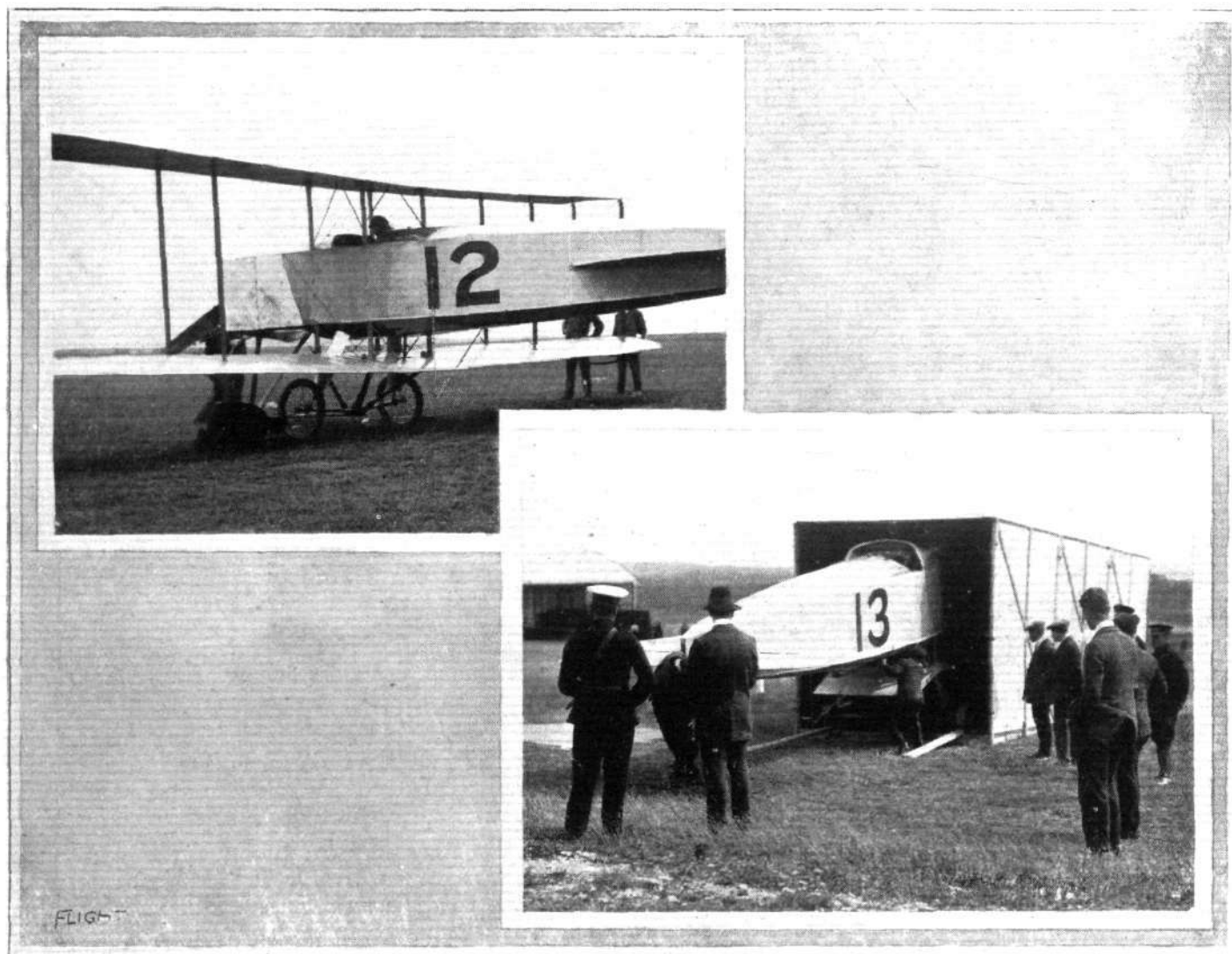
Salisbury Plain, Monday.

AUGUST BANK HOLIDAY, *dies non* in the Government's flight calendar, is not an inspiring day on the Plain; nor does the wind and the rain improve the weather. What sheds are open are hives of interest, the machines they contain well worthy of a close inspection, but to what end? It is a tiring business to wander aimlessly from door to door, seeing much but collecting little; let us try for the nonce to fix ideas on a point at a time, and make a table of the results.

A flying machine is essentially of two parts, (i) the engine; (ii) the rest. Let us deal with the engine, and for the sake of completeness we will include in the list all the entries, notwithstanding the fact

Green on the Avro biplane carries even more—30 lbs. per h.p., according to maker's rating and stated weights.

Now, power is a product of speed and load; hence, the less the load per unit of power the faster should be the inherent speed of the machine. There is, however, another factor that affects the question, viz., loading—it affects the matter because there is a range of speeds at which the machine can be supported in flight, by varying the altitude (flying *cabré*) within the limits peculiar to individual aeroplanes; and also because, whatever the loading may be, it must be attained before the machine can fly at all, which means that a certain fraction of the power available is definitely apportioned to satisfy the loading factor.

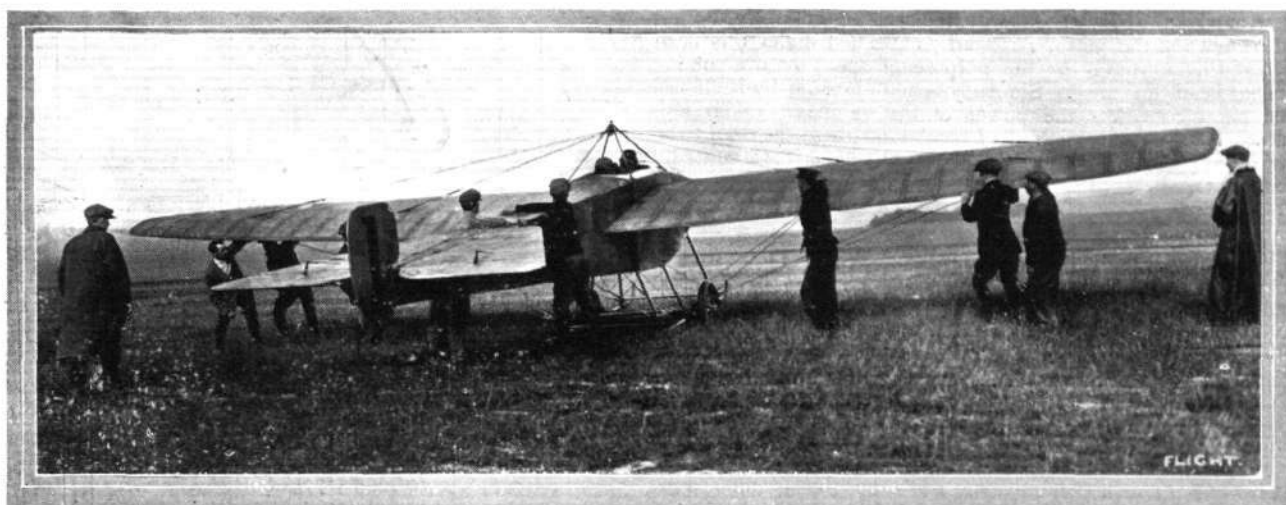


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THE MILITARY AEROPLANE COMPETITION.—Above, Gordon England setting out for a flight on his Bristol biplane. Below, Pixton's Bristol being run out of its crate.

that some have not yet turned up. Here is a table in which all the engines of like make are grouped together; it is interesting, apart from any other consideration, to note the predominance of the Gnome. Not all are in evidence, but sufficient at least to make their comparative performances on the different machines a source of instructive information. Observe how their tasks vary: on the French Deperdussin the 100-h.p. model has to carry only 14 lbs. per h.p.; on the British-built "Dep." it has to carry 20 lbs. per h.p., because of the difference in weight between the two machines. The British "Dep." has a much more substantial-looking undercarriage for one thing. Compare some of the others: the Renault, on the Aircraft Co.'s Maurice Farman, carries 28.6 lbs. per h.p., twice as much as the Gnome on the French "Dep."; while the 60-h.p.

The purpose of the investigation, it will be seen, is to analyse the work done by the engine, by ascertaining the degree to which the designer has ear-marked his available engine-power under the various headings. Thus, for example, one would say that it is only fair to give the Bristol with the 70-h.p. Mercedes credit for lifting 32.9 lbs. per h.p., whatever else it may do. But it also must fly fast enough to lift 5.4 lbs. per sq. ft., and the question arises, does it fly more or less efficiently than some other machine supporting a similar loading? It would seem that the load carried per unit of power is the other factor of consequence in this consideration, and in the table these two values (weight per h.p. and weight per sq. ft.) have been multiplied together to produce a new constant X for the comparison of aeroplanes when their speeds are known.

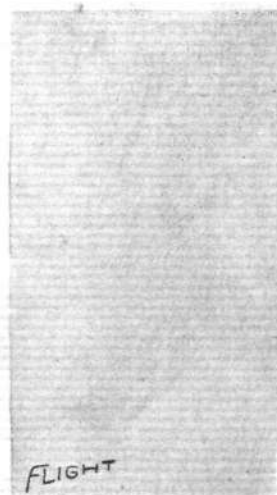


THE MILITARY AVIATION TESTS.—One of the Hanriot monoplanes flown by Bielovucic starting off with Major Brooke-Popham as passenger.

The missing column in the table at the present time is that which should contain the speeds of the machines. These are not yet available, as the tests have not yet been made, but the purpose of the constant  $X$  is sufficiently clear as it is. By multiplying the tested speed of any aeroplane—or probably it would be more accurate to take  $V^2$ —by the constant  $X$ , as given in the table, another factor is obtained, which should give a direct basis of comparison between the machines. Probably the range of the com-

parison is limited, but it should at least be interesting to study the performances of similar engines by this means.

Virtually, what the constant  $X$  means by itself is the "claim for efficiency" made by the designer in respect to his machine. What the new factor ( $X \times \text{speed}$ ) will represent will be the efficiency attained by the machine in flight. The presence of a high value for  $X$  against any machine signifies that the constructor thinks very highly of the efficiency of his design because he is using a small



THE MILITARY AVIATION TESTS.—Assembling machines under observation. Above one of the Blériot monoplanes being put together; below, the Martin Handasyde being assembled.



engine for the weight carried and is, moreover, supporting it in a small area. Had the area been large, the speed essential for support would be low and the power necessarily expended under this head less, thus leaving more for the purpose of speed or overcoming extraneous head resistance. Similarly, a high loading by itself has little significance unless the power of the engine is taken into account. Possibly the method of combining these factors in the present investigation may not be highly scientific and it is admittedly hurried. In any case, however, it suggests a line of thought that readers of FLIGHT may like to discuss, and it seems sufficiently evident that some sort of "figure of merit" is wanted if we are going to get any sort of idea of what relative use is being made of engine power on modern machines in a comparative trial of various types such as the Military Competition that is about to commence.

Reverting to the table, it is interesting to observe how widely the constant X differs for the various machines. In the Avro, with the Green engine, it is 161; in the Mersey, with the Isaacson, it is 73.8. In the Piggot, which has only a 35-h.p. Anzani and 100 sq. ft. of surface to carry 700 lbs., it is 141. An average value, and by inspection of the figures, is apparently in the order of 100.

The only fixed quantities are the area and the weight; unfortunately, the power is an uncertain value, and although this emphasises the importance of X as a useful figure, it is not conducive towards accuracy. In other columns the dimensions of the engines are given, including the cylinder capacities, and the cubic inches per h.p. of piston displacement. This is always a useful value to have in any comparative table of engines, for it indicates in some measure the type of motor employed, and is a slight indication as to whether the maker's ruling is under or over the probable capacity of the engine. Estimates based on capacity must be made with care, for it is possible to get a h.p. from about 3 cubic inches and upwards. The corresponding value for the Gnome design is nearer 10. The Mercedes is only 5.5, and the Anzani 5.9. These and many other considerations are suggested by our little table, and the progress of the trial should help materially to fix ideas on some of them.

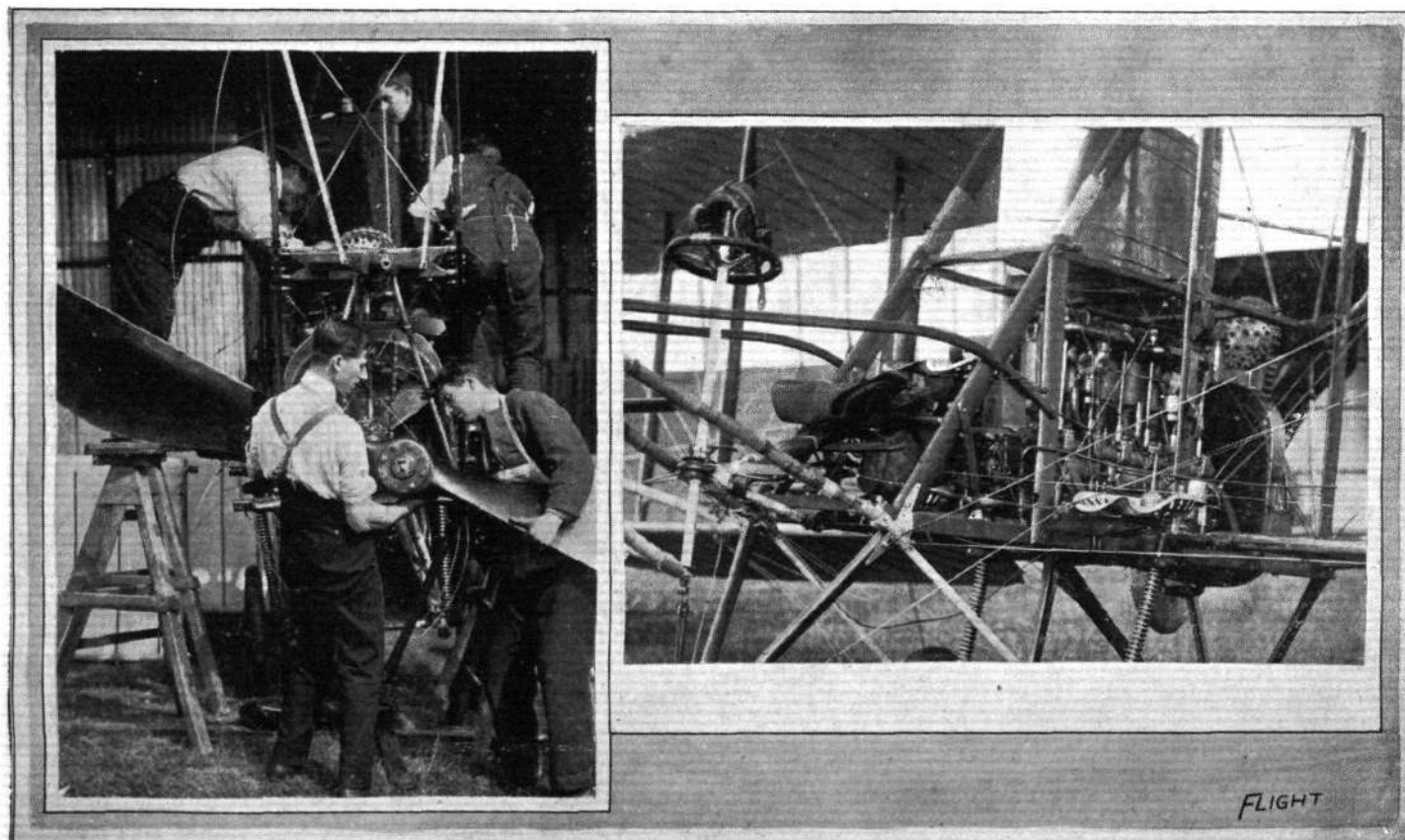
Salisbury, Tuesday, noon.

Five a.m. and a bleak and rainy morning. It is not encouraging, and the prospect of any pilot venturing on the three hours' test or the speed trial under such conditions is remote in the extreme. The blue flag flies at the staff-head, officially it is "good enough"; two army machines take the air for a spell to give colour to this opinion, but there is a difference between flying for as long as you please

## Engines in the Military Trials, 1912.

Motor.	h.p.	Weight, lbs.	Weight, h.p.	Area, sq. ft.	Weight, area.	(Wt./h.p.) × (Wt./sq. ft.)	Aeroplane.	Cyls.	Bore.	Stroke.	Cu. ins. capy.	Cu. ins./h.p.
						X.						
Gnome	70	1172	16.7	214	5.5	91.8	Blériot ...					
"	70	1277	18.25	297	4.3	78.5	"	7	130	120	680	9.7
"	70	1450	20.7	240	6.1	126	H. Page ...					
"	80	1135	16.9	165	8.2	138	Borel ...					
"	80	1365	17.1	258	5.28	90.5	Bristol ...	7	124	140	720	9.0
"	80	1365	17.1	258	5.28	90.5	"					
"	100	1950	19.5	350	5.44	106	Coventry...					
"	100	2120	21.2	424	5.0	106	Bristol ...					
"	100	2000	20.0	270	7.9	148	Brit. Dep.					
"	100	1400	14.0	248	5.65	79	Fr. Dep...	14	110	120	965	9.65
"	100	1400	14.0	248	5.65	79	"					
"	100	1500	15.0	269	5.77	86	Hanriot ...					
"	100	1500	15.0	269	5.77	86	"					
Canton	110	2150	19.5	465	4.62	90	Breguet ...	9	120	140	870	7.2
Unne	110	2100	19.1	465	4.52	88	"					
AustroD.	120	2140	17.8	—	—	—	Lohner ...					
"	120	—	—	—	—	—	Cody (M.)					
"	120	2000	16.7	500	4.3	77	" (B.)					
Green	60	—	—	—	—	—	Harper ...					
"	60	1800	30.0	335	5.38	161	Avro ...	4	140	146	548	9.1
A.B.C.	60	1800	30.0	335	5.38	162	"	8	112	120	576	7.2
"	100	2000	20.0	400	5.00	100	Handley ...					
Anzani..	35	700	20.0	100	7.00	140	Piggot ...	3	105	130	206	5.9
"	100	2000	20.0	270	7.4	149	Brit. Dep.	10	105	125	752	7.52
Chenu	75	1800	24.0	310	5.8	139	Martin H.	6	110	190	660	8.8
"	110	2050	20.5	300	5.83	110	Coventry ...					
Isaacson	45	1150	25.6	400	2.88	73.8	Mersey ...					
Mercedes	70	2290	32.9	425	5.4	178	Bristol ...	4	120	140	385	5.5
"	100	1870	18.7	350	4.77	89	King ...					
Renault	70	2000	28.6	700	2.86	81.7	Avicraft ...	8	96	120	425	6.1
Viale	70	—	—	—	—	—	Vickers ...					
N.E.C.	—	—	—	—	—	—	Ariel Wheel					

\* Weight complete in flight.



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**THE MILITARY AEROPLANE COMPETITION.**—Assembling the Cody biplane before the judges. Mr. S. F. Cody, ever active, assists in the operations. The photograph on the right shows the central part of the machine. The passenger seat, projecting from the side of the engine-bed, is worthy of note.

and going out for three hours on end. The Hanriot No. 1 was forced to come down after  $2\frac{3}{4}$  hours on its first attempt last week owing to a broken valve spring; it is ready and waiting this morning, but the pilot, apparently, is abed—where we others wish we were. Many of the other machines are still doing their *quick assembling test*, which in some cases has lasted about four days! "British built" some of these machines will be with a vengeance—the army sheds being regarded, apparently, by some of the competitors as free workshops.

Doubtless, when the weather clears up a little, there will be less leniency; in any case, it will be necessary to institute a time-limit, if the trials are to be completed within a reasonable period. If the blue flag flies for nine hours on end it should signify a "flying day," and ten such days ought to be time enough for the competitors to show what they can do. Military aeroplanes, after all, are intended to be used in all sorts of weather, and it is not at all desirable that anyone should be encouraged to wait for an extra-fine day.

In the meantime there is little to do but study the notice board, on which are the performances to date. The first in order of publication is the quick assembling test, in which the machines had to be put together after transport and flown over a short circuit to show that they were in a sound condition. There is a very remarkable variation in the times taken for this work, which range from a mere quarter of an hour occupied by the Avro and the Hanriot up to several hours on the part of some machines. The three factors of greatest importance to success in this test are clever detail design, an easy starting engine, and a well drilled crew. The Avro machine possesses all three; in its design the cleverness of the detail has been equal to the forethought bestowed on the problem, the Green engine started at once although it had never been in the machine before, and the crew consists of a number of enthusiasts who individually and collectively know their job. Decidedly is the firm of Roe and Co. coming very much to the fore; among wholly British machines (with British engines) it should stand at the top if it comes anywhere near to expectations.

Nine machines took less than an hour to assemble, and one other, in addition to the Avro, was a biplane—the Bristol—which also must be regarded as an excellent performance. Equally notable is the fact that Cody got his big machine together in an hour and thirty-five minutes, so that from the evidence already available there seems no reason why the Army should not have all their machines made easy to dismantle if the point is considered of very great importance.

Of the 32 machines entered, only six are officially marked "not



Capt. Godfrey M. Paine, R.N., Commandant of the Central Flying School, and one of the Judges in the Competitions.



THE MILITARY AVIATION TESTS.—Vedrines coming to earth *en vol plané*, after a test flight on the 100-h.p. Gnome-engined British-built Deperdussin monoplane.

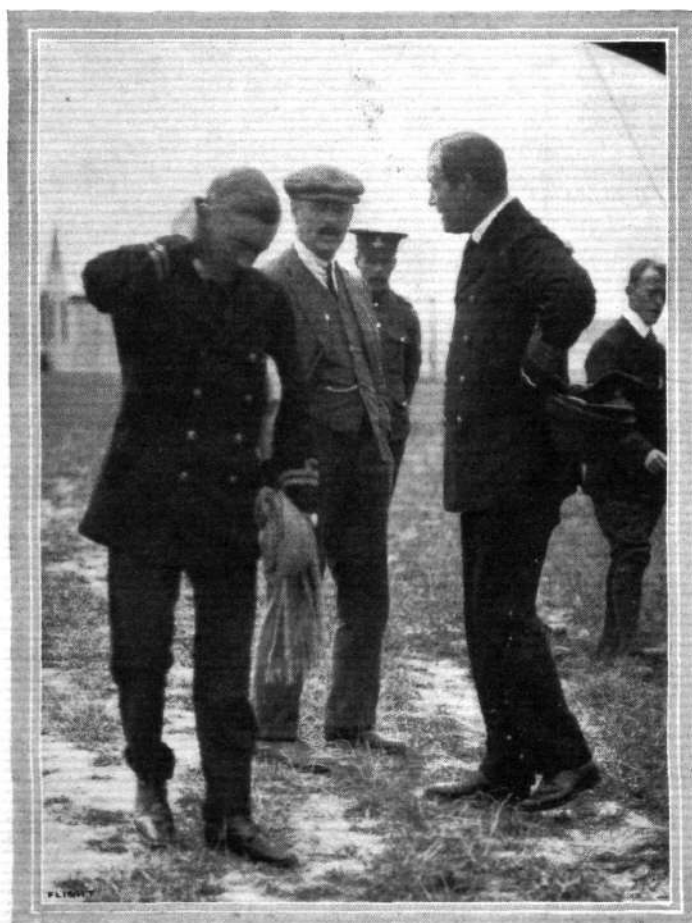


		Quick assembling.		Climbing first 1,000 ft.	3 hours' flight.	Petrol.				Oil.			
						Capacity of tank.	Used in 3 hours.	Gals. per hour.	Required for 4½ hrs.	Capacity of tank.	Used in 3 hours.	Gals. per hour.	Required for 4½ hrs.
		men.	h. m. s.	mins.		gals.	gals.		gals.	gals.	gals.		gals.
1	Hanriot (100-h.p. Gnome) ...	5	0 22 58	3									
2	Hanriot (100-h.p. Gnome) ...	5	0 14 43	3	Yes	41	26	8.65	39	11.25	6.25	2.08	9.37
3	Vickers (70-h.p. Viale) ...	6	0 53 30										
4	Blériot (70-h.p. Gnome) ...	4	0 59 57	5½	Yes	27	16	5.35	24	8.25	5.08	1.7	7.62
5	Blériot (70-h.p. Gnome) ...	4	1 27 0	8	Yes	27	18.9	6.3	28.35	9.5	5.0	1.67	7.5
6	Avro (60-h.p. Green) ...	6	0 14 30										
7	Avro (60-h.p. A.B.C.) ...	Not arrived											
8	Breguet (110-h.p. C.-Unné) ...												
9	Breguet (110-h.p. C.-Unné) ...												
10	Coventry (100-h.p. Gnome) ...	5	1 51 45										
11	Coventry (110-h.p. Chenu) ...												
12	Bristol (Bi.) ...	4	0 54 5										
13	Bristol (Bi.) ...	4	1 32 0										
14	Bristol (Mon.) ...	5	0 17 52										
15	Bristol (Mon.) ...	4	0 23 35*										
16	Flanders (100-h.p. A.B.C.) ...	6	0 40 0†										
17	Martin H. (75-h.p. Chenu) ...	—	1 33 0										
18	Ariel Wheel (N.E.C.) ...												
19	Mersey (45-h.p. Isaacson) ...	3	4 25 0										
20	British Dep. ...	5	2 0 55										
21	British Dep. ...	5	7 15 0										
22	Aircraft (70-h.p. Renault) ...	5	9 29 0	7	Yes	35	21	7	31.5	3.5	2.2	.73	3.3
23	Kny (100-h.p. Mercedes) ...	Not arrived											
24	Lohner (120-h.p. A.-Daimler) ...	Not arrived											
25	Weston Hurlin ...	Not arrived											
26	French Dep. (100 h.p. Gnome) ...	4	1 56 0	3	Yes	38.5	25.25	8.4	36.42	7.25	4.0	1.33	6.0
27	French Dep. (100-h.p. Gnome) ...												
28	Handley Page (70-h.p. Gnome) ...												
29	Piggot (35-h.p. Anzani) ...												
30	Cody (Mon.) (120-h.p. A.-Daimler) ...	Not arrived											
31	Cody (120-h.p. A.-Daimler) ...	6	1 35 0	3½	Yes	42	27	9	40.5	4.25	1.25	.42	1.87
32	Borel (80-h.p. Gnome) ...	Not arrived											

\* Without engine.

† Damaged in landing.

N.B.—The Hanriot, weighing 1,500 lbs. in flight; 3 mins. for 1,000 ft. represents about 15-h.p. in climbing. French "Dep.," weight 1,400 lbs. = 14 h.p. Cody, weight about 2,150 lbs. = 18.6 h.p. used in climbing.



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Lieut. Longmore, R.N., with Capt. Godfrey Paine, R.N., arrived at Salisbury Plain from Farnborough on the Maurice Farman biplane for the Military Competitions.



"Flight" Copyright.  
After the three hours' official test on the Hanriot monoplane.—S. V. Sippe and Lieut. Lawrence being weighed in.



arrived." This is quite remarkable, and should give the "doubting Thomases" of the aviation world food for much thought when they reflect on the usual percentage of land vehicles that turn up at important motor trials and the like. As a matter of fact, we see no evidence of the presence of the second Breguet and the second French "Dep," but even so there still remain the goodly number of 24 machines actually on the field. One of these, the Flanders, is, unfortunately, without an engine, but the remainder can, presumably, fly, and 18 have done so in order to pass their assembling test.

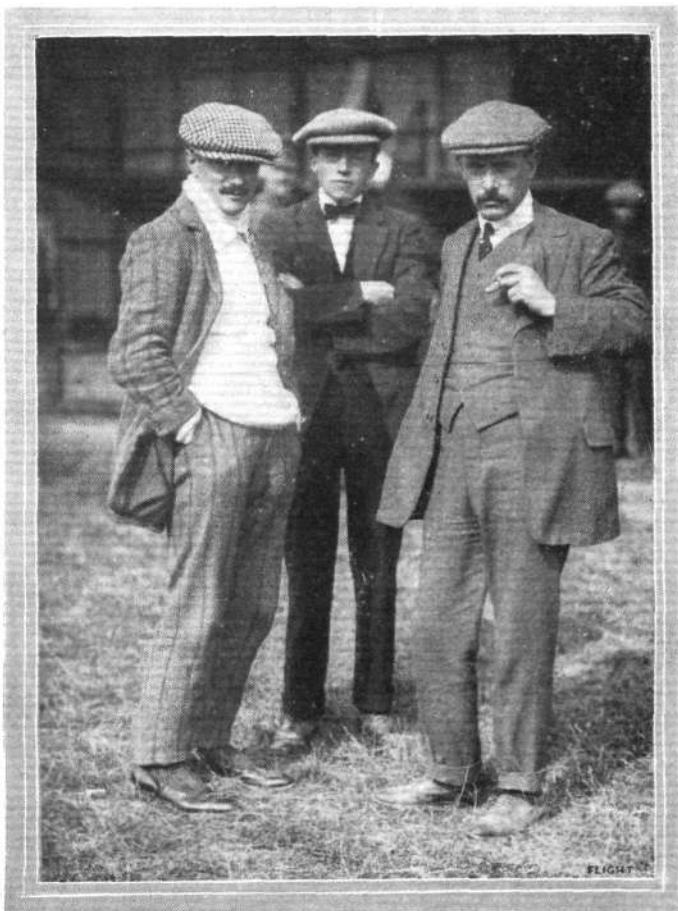
Seven machines have already attempted their three hours' qualifying flight with 350 lbs. load, and six have passed the test; the Hanriot that failed having, as already mentioned, to descend in the last quarter of an hour on account of a broken valve-spring. It is interesting to study the official figures for fuel and oil consumption during this test. All machines have to be fitted with tanks capable of holding sufficient oil and petrol for a  $4\frac{1}{2}$  hours' flight; some of the constructors have cut the capacity a little fine, and one of the Blériots works out at about a gallon and a-half short on the basis of the petrol used in the three hours' flight. In all cases the petrol represents a considerable fraction of the load carried; at 8 lbs. per gallon (approximate weight) a 40-gallon tank represents 320 lbs. exclusive of its own weight. Even the oil is not negligible when, as seems necessary with the 100-h.p. Gnome, the tank should hold about 10 gallons, which would represent about 100 lbs. The oil consumption of the Gnomses is still very high, but apparently less than it used to be; the present ratio of fuel to oil consumed in these engines being about 4 to 1. In the stationary engines, the oil is, comparatively, an insignificant item.

An important figure in this part of the table is the fuel consumption per horse power per hour, which varies from '6 on Cody's 120-h.p. Austro-Daimler to '8 on the Aircraft Co.'s 70 Renault. Of course these values are based on the maker's stated h.p. If the Renault develops more than 70-h.p. the consumption would be improved, but as it has only 6'1 cub. ins. of cylinder capacity per rated h.p. there is no reason to suppose that the rating is much under the mark.

Another test already attempted by the seven "elect" is the climbing, which brought out four notable performances on the part of the two Hanriots, the French "Dep." and the Cody. The three machines first mentioned climbed 1,000 ft. in 3 mins.—the maximum time allowance being 5 mins.—which is 333 ft. per min., and repre-



Lieut. Longmore, R.N., is amused at the efforts of the FLIGHT photographer to snap him.



M. Vedrines has a word on the merits of Shell spirit with Mr. Cates, of the British Petroleum Syndicate, Ltd.

sents an expenditure of 15 h.p. in the case of the Hanriots, and 14 h.p. for the French "Dep." The Cody climb—with which Mr. Cody is totally dissatisfied, as he expects to do very much better—consumed 18'6 h.p., on the basis of 2,150 lbs. in flight. The percentage of the full engine-power represented, however, is the same as for the Hanriot, viz., 15 per cent.; and as the value of X for the Hanriot is 86, whereas for the Cody it is only 77, the Cody has appreciably more spare power. In any case, in order to justify its engine-power—which, according to Cody himself, is 130 h.p. at times—the Cody machine must do an uncommonly fast climb or an extra high speed on the level. Alternatively, of course, it might obtain a higher value of X by carrying more load, but the conditions do not require it, which shows how the constant X is related to design for specified requirements. Thus, Cody claims for his machine the capacity for carrying 1,200 lbs. load instead of the 800 lbs. now on board: that would raise X to 115 and correspondingly reduce the speed and climbing necessary to justify the power.

In this climbing test, the two Blériots and the Maurice Farman will have to try again, as their times exceed the 5 minutes limit. One of the Blériots was half a minute slow and represents 6'5-h.p. or 9'3 per cent. of the full power. The value of X for this machine is 91'8, which is fairly high; at any rate it leaves less percentage surplus power than is available on the Hanriot, consequently it will be interesting to see what finally happens. The percentage of power used by the Maurice Farman in climbing is 12'4.

Salisbury, Wednesday afternoon.

Yesterday afternoon a 45-m.p.h. gale was blowing, and its strength can be gathered by the fact that it lifted the roof of the Coventry Ordnance Chenu shed and deposited it in the next field. This morning was occupied in weighing the aeroplanes which had not so far undergone this operation.

In the evening some splendid flying in the wind was seen. Mr. Gordon Bell was first out on the Martin Handasyde, followed by Busted on the Bristol monoplane, Prevost on the French-built Deperdussin, Verrier on the Maurice Farman, S. F. Cody on his biplane, Perreyon on Blériot 4, and Lieut. Parke on the Avro, who was up for half an hour. Unfortunately, after landing, when taxiing, this fine machine was badly damaged, the pilot being unhurt. Major Brooke-Popham was also out on the War Office Avro.

# THE MILITARY COMPETITIONS.

(By a Special Correspondent.)

Lark Hill Camp.

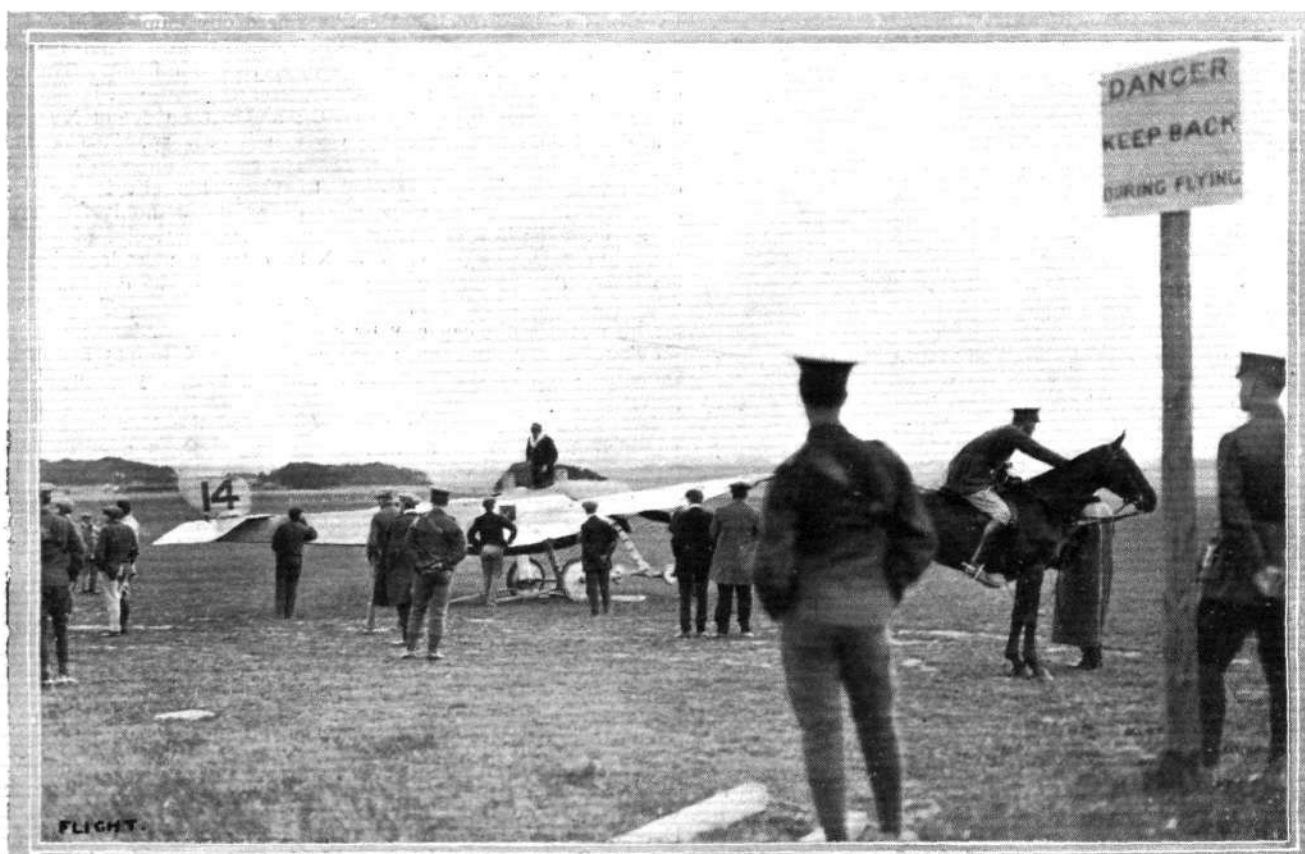
THE proceedings started to day, August 1st, by an assembling competition, machines being taken out of their crates and erected. The Avro was the first put together, time taken being about 14½ mins. The next was one of the Hanriots (17 mins.), followed in order by a Bristol monoplane, another Hanriot, another Bristol monoplane, the Vickers, two Bristol biplanes, the Cody and the Coventry Ordnance. At about 7.15 p.m. Major Brooke-Popham made a trial on the Gnome-Avro (one of those lately delivered to the War Office), showing the course machines were to fly in the following test, which was round a wood about two miles distant. He was followed by Lieut. Parke on the Green-Avro, who put up quite a good show, considering the fact that his engine, owing to a propeller of too large a diameter and blade-width, was only turning at about 900 revs. The next machine was one of the Bristol monoplanes, flown by Busteed. This is the one about which the daily papers have made such a fuss, describing it as "a totally enclosed monoplane fitted with funnels for air," which are in reality the streamline coverings for the stay-wire masts. This machine gave an excellent impression, climbing splendidly, and having a very good turn of speed. Perreyon next followed on the Blériot, then Valentine on another Bristol monoplane. This pilot had a remarkable piece of bad luck. When up at some height his engine failed, so he came down *en vol plané*. When nearing the ground he found that he would with difficulty clear a fence in front, so made machine come down at a slightly flatter angle than its normal gliding angle. The result was a pancake which converted itself into a side-slip, and the machine struck the ground with the left-hand wing, its nose being severely damaged. Fortunately the pilot was uninjured. Next were MacDonald on the Vickers and Bielovucic on the Hanriot, flying very satisfactorily. They were followed by Cody and Sopwith, the latter taking as passenger, Howard Wright. The first named gathered an enormous speed in finishing off by coming down with the wind and with his engine running all out. Sippe was prevented from making his test flight to-day owing to trouble with the pressure tank. At the end of the evening Prevost was out for a short while on the Deperdussin.

It would be as well here to mention the bad luck which has befallen several firms. Martin and Handasyde have had the

misfortune to have the bevel sheered on the magneto drive, putting this out of action for the time. It is a great disappointment to all concerned and Gordon Bell in his own words, is "spitting blood."

On the Coventry Ordnance Chenu a magneto shaft has broken. L. Howard Flanders, Ltd. have also experienced ill luck. The biplane was towed down with its tail on a motor car, and running on its own wheels. When at the very entrance of the ground a wheel struck a small post sticking in the earth. As the chassis has not been designed for strains in a forward direction, the wheel was pulled forward, causing the undercarriage to be severely damaged. The Borel machine has not been got ready in time for the Trials, while we hear that the Mars monoplane and the Lohner biplane have not been permitted to compete by their governments.

On Friday morning the first machines out at 4.45 a.m. were an Anzani-engined Deperdussin and Brooke-Popham on the Gnome Avro with a passenger. The latter went across country and returned after about three-quarters of an hour's absence. Before his return a Nieuport was flown over from Farnborough by Barrington-Kennett. This machine has, as is well known, a truly remarkable gliding angle. Sippe then made the test he had omitted the previous evening, and took a passenger with him. Lieut. Porte made a flight on the 10-cyl. Anzani Deperdussin machine flying very "tail-high." Bielovucic then took a passenger for a fine flight at about 1,000 ft., with some sharply banked turns. Cody, after a good flight, indulged in some "figure skating" on the ground, making some sharp circles with the wheel on his wing tip as centre. Later in the morning England made a trial flight in the new Mercedes-engined Bristol biplane. It was this machine's first time in the air, so was not all as it should be. England made a gradual half-turn, and landed across the valley, taxiing home. Subsequently, after an alteration in propellers, machine flew very well indeed. Pixton, when landing on the Bristol biplane, had the misfortune to break a chassis strut, eventually smashing the whole undercarriage. In the afternoon Perreyon started off on the 80-h.p. Blériot for his three hours' test, being at times lost in thunder clouds. Vedrines made a short flight on the British-built Gnome Deperdussin, while Sippe took Lieut. Lawrence on the Hanriot for a "joy-ride," complaining greatly of the atmospheric conditions. Apart from the "Trials" flights there was an excellent exhibition by Capt. Hamilton on the old two-



THE MILITARY AVIATION TESTS.—Busteed preparing to start off for a trial spin on one of the Bristol military monoplanes.



seater Deperdussin that used to be at Brooklands, who discharged signals and blasts on an electric horn while in flight. Barrington-Kennett and Conner also made good flights on military Nieuports, the former unfortunately breaking a rather tired spring on landing. Busted on the monoplane, Cody, Sopwith on the Coventry Ordnance, and England on the Bristol biplane next took the air. Meanwhile Perreyon was steadily continuing on his three hours' test, finally coming down after three hours and two minutes. He had reached an altitude of 5,500 ft., complaining of the cold and describing part of his journey as being "chaotique."

Next morning being Saturday, Cody started proceedings at about 4 o'clock by going for his three hours' test with Lieut. Parke as passenger. They found that the air was very bad at low altitudes, but very nearly perfect "up aloft." The two Hanriots followed him, the pilots being Sippe and Bielovucic. The former successfully accomplished the three hours' test, flying very well indeed. The latter had a piece of very bad luck, being compelled to alight 18 mins. before the elapse of 3 hours through a broken inlet-valve spring. Verrier made an attempt on the Renault-engined Maurice Farman but afterwards alighted. He then went up again and passed with success, consuming 20 out of 33 gals. of petrol and 2 out of 3 gals. of oil. Perreyon started off on the side-by-side Blériot at about 7.30, but consumed 4 out of 5 gals. of oil. The Vickers, under the pilotage McDonald was out early up at 1,000 ft. testing gliding powers. Prevost also took out the French Deperdussin, and passed with flying colours.

Sopwith took out the Coventry Ordnance, but alighted soon owing to the engine not pulling sufficiently well. When Sippe alighted it was found that he had easily passed the climbing test, as he had reached 1,000 ft. in 3 mins., the next 1,000 in 3½ mins., the next in 4 mins. and the next in 7 mins. 5,000 ft. he reached in 21 mins. Cody was found not to have climbed sufficiently, as he did not know that the climbing test was during the duration test. He incidentally was nearly frost bitten at high altitudes. The weather, by the way, is rainy, and very cold at night and in the early morning. To-day a notice was posted up to the effect that the 3 hours' test would in future be round the sheds, the Central Flying School, and the north end of Fargo Wood. Another was to state that the speed test would start from the flagstaff on Knighton Down, and that competitors would be able to start at 6 p.m. if they so desired. Wind and rain, however, prevented any more work in the air being done, except for a trial by a non-competitor, Capt. Hamilton, on the army Deperdussin.

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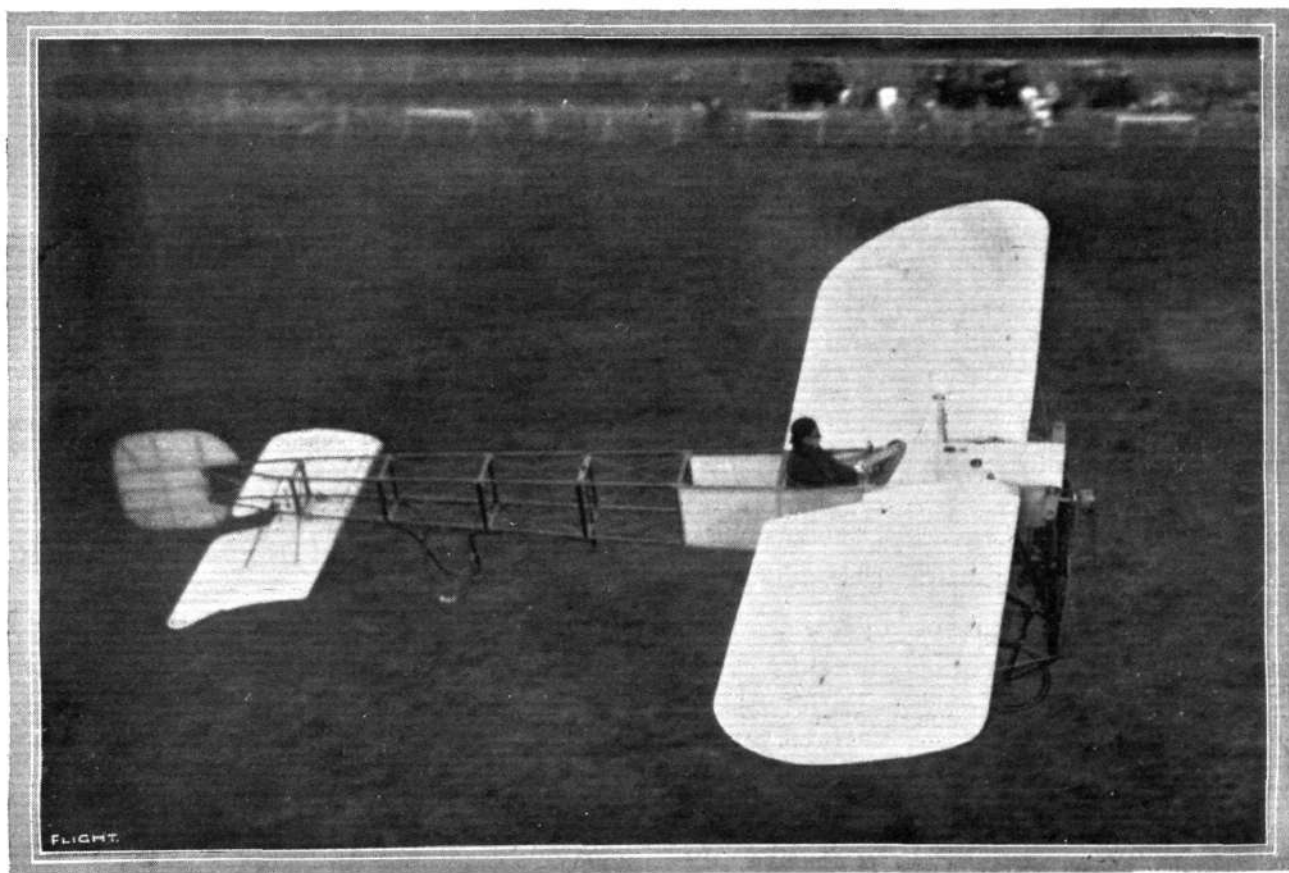
"Flight" Copyright.

Lieut. I. C. Porte, R.N., in the seat of the British-built Deperdussin monoplane.

Sunday was a most objectionable day, wind and rain being largely in evidence.

It would be as well here to mention the arrangements made by the authorities for people concerned in the competition. Pilots and designers have meals together in a large tent at the camp, while mechanics have a separate mess. Sleeping accommodation in furnished tents is provided.

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"Flight" Copyright.

In the above picture the single-seater Blériot appears to be standing on the ground. As a fact, it is Mr. Gustav Hamel on his new single-seater flying quite low at a speed of between 50 and 60 miles an hour past No. 1 pylon at the London Aerodrome, Hendon.



## THE MILITARY COMPETITIONS— THE MACHINES.

### THE AVRO BIPLANE.

THIS machine is one of the most remarkable of those flying at Salisbury, for the fact that it is the only one of the competition machines that allows the pilot and passenger to be totally enclosed and so completely protected from the rush of air. It is an interesting fact with this new Avro biplane that, with the side windows open the only wind felt is one which comes from the side when turning and banking. As will be seen by the photographs we publish this week, the fuselage completely fills the gap between the main planes. It is approximately streamline in side elevation, and its section may be represented by a tall vertical panel. The body is surprisingly narrow. Where the pilot and passenger sit it is only sufficiently wide to give them free movement. At the extreme front it is only 15 inches wide, a dimension which is obtainable by the use of a 60-h.p. vertical Green engine. The planes are identical with those fitted to the machine already supplied to the War Office. On the "all enclosed" biplane one deck is fitted to the extreme top of the fuselage, and the other to a point near the bottom. The warping wires pass from the top plane through slots in the lower, round a phosphor bronze four-grooved pulley attached to the end of the skid. It has been so arranged that a warp of eighteen inches at the wing tip is possible.

The landing gear is admittedly of Nieuport pattern, but it has the refinements that rubber blocks are interposed between the skid and the chassis struts, and that the transverse leaf springs are fitted to the wheels in an improved manner. The military authorities, recognising this latter improvement, are, by the way, now fitting this type of spring attachment to their Nieuport monoplanes.

Access to the interior of the body is obtained through triangular doors. A dashboard, on which are fitted all the instruments necessary for cross-country flying, is arranged to fill the whole space between the planes in front of the occupants. The latter are provided with safety belts.

The rudder serves a double purpose. By being shod with iron and by being arranged to slide vertically up and down the rudder post against the action of a spring, it is made to serve as a rear skid, as well as to perform its usual function of directing the course of the machine.

#### Main characteristics:—

Overall length	...	30 ft.	Weight without complement or	
Span	...	35 ft. 8 ins.	fuel	1,250 lbs.
Speed	...	65 m.p.h.		

### THE BREGUET BIPLANES.

BOTH the Breguet biplanes met with misfortune in being got to Salisbury Plain. The one flown over by Moorhouse met with a *contretemps* at Ashford in Kent. The other started from London on Tuesday, July 30th, being conveyed on a trolley drawn by a steam tractor. At both Basingstoke and Andover, wheels gave out, while some time later one of the axles broke. These accidents, of course, occurred to the trolley, and when the biplane was examined at Lark Hill it was found not to be damaged in any way. The delay, however, had prevented it from being present while the assembling tests were in progress.

Neither machine presents any very great difference from the customary Breguet design, excepting that the motors are fitted in a horizontal position, instead of a vertical, as heretofore.

The drive to propeller, instead of being direct, has therefore to operate through a bevel which is geared down 1 to 1.8. The propeller speed is about 720 revs. per minute.

A point to notice is the system whereby the pilot may, if necessary, disconnect the passenger's control while in flight by means of a foot pedal.

Brakes to assist in pulling up after landing are fitted. They are also operated by a foot pedal.

It is possible to start the engine from the passenger's seat.

#### Main characteristics:—

Overall length	...	34 ft.	Speed	...	72 m.p.h.
Span	...	47 ft.	Weight without complement or		
Area	...	400 sq. ft.	fuel	...	1,300 lbs.

### THE BRISTOL MONOPLANES.

THE monoplanes representing the Bristol firm in the Military Trials probably look more warlike than any other machines flying just now on Salisbury Plain. Their disc wheels and the amount of aluminium sheathing used in covering the front part of the machines gives them

an armoured appearance, and the two little streamline stay-masts above, like miniature funnels complete the impression. Everything exposed to the relative wind has been shaped to decrease resistance. When flying they both have the appearance of four-seaters, owing to the resemblance, at a distance, of the streamlined stay-masts to passengers' heads.

The body is of the lattice girder type, flat at the sides but belled out top and bottom with curved formers over which aluminium sheathing is applied. Pilot and passenger sit in tandem and are both provided with controls. In both cases an 80-h.p. Gnome motor of the Grand Prix type is fitted under an aluminium cowl which is designed to reduce the head resistance that the engine, unshielded, would cause. The efficient cooling of the engine is, apparently, not interfered with in the slightest.

The wings are quite different in shape from those used on the former "Prier" type of Bristol monoplane. In the present machines the rear spar is longer than the front, a system that many constructors have resorted to of late by virtue of the fact that it is thus possible to obtain a more powerful warp. In the case of the Bristol monoplanes this is increased, owing to the flexible construction of the wings. The spars are virtually steel tubes filled with wood, and the ribs, instead of being directly connected to them, are threaded thereon. A new wing camber has also been adopted. The one at present used has a Nieuport type of entering edge, and a slightly turned-up trailing edge. On each side of the pilot's seat a section of the wing to the rear of the back spar has been cut away to allow of a better view being obtained. The warping wires are carried to and operated from a single mast beneath the fuselage. This mast is carefully shaped to avoid resistance, and the warping pulleys are similarly protected. The Bristol firm have, in these monoplanes, departed from their practice of employing a completely movable *empennage*. They now use a fixed stabilising plane with elevator flaps hinged to its rear edge.

The landing gear strikes one as being particularly solid and efficient. Four exceedingly strong vertical struts connect the two horizontal skids to the body. At the rear these skids are laminated to form flexible extensions, which may assist the machine in coming to rest after landing. The struts themselves are not rigidly attached to the skids, but are joined thereto by a form of joint which relieves the fuselage of any kind of twisting strain which may result in landing. At the front ends of these straight skids are fitted short tusk-shaped organs, which carry a miniature pair of wheels, Cody fashion.

#### Main characteristics:—

Overall length	...	28 ft.	Weight without complement or	
Span	...	40 ft.	fuel	792 lbs.
Area	...	242 sq. ft.	Propeller	Bristol
Motor	...	80-h.p. Gnome		

### THE CHENU-ENGINE COVENTRY ORDNANCE BIPLANE.

THIS machine differs very little from the 100-h.p. Gnome-engined biplane that we described in these columns quite recently. The main point of difference, besides the fact that a 110-h.p. water-cooled Chenu motor is fitted instead of a 100-h.p. Gnome, is that the fuselage is much narrower, being designed to accommodate the pilot and passenger in tandem. The main dimensions, too, are considerably smaller. A four-bladed propeller is employed.

#### Main characteristics:—

Overall length	...	32 ft.	Speed	...	68-70 m.p.h.
Span	...	32 ft.	Weight without complement or		
Area	...	300 sq. ft.	fuel	...	1,250 lbs.

### THE MARTIN HANDASYDE MONOPLANE.

IN general outline this machine has much in common with the well-known but now almost extinct Antoinette monoplane. At Salisbury it has created a very good impression, for not only are its general lines extremely pleasing to the eye, but the materials and workmanship used in its construction are of the very first order. Its main body, in appearance, is slim, but of its strength there is not the slightest doubt. Its section is that of a triangle with its apex clipped. Above the body in front is applied a streamline superstructure for the protection of pilot and passenger, and for the reduction of the head resistance that they would otherwise cause. A section of this superstructure is formed by the radiator which fits saddle fashion across the top of the body. Totally enclosed in

front, is mounted the 75-h.p. Chenu engine, driving a Chauviere propeller. Each wing is built about two spars, which are hollow box girders formed of ash and three-ply wood, screwed and glued together. Where clips are applied the hollow spar is filled solid, to give greater strength at these important points. There is very little camber in the wings, and from root to tip the camber diminishes regularly—it "washes out" as Brooklands people say. That section of the wing by the side of the pilot's seat is cut away to allow the pilot a good view directly beneath him. King posts, carefully moulded to an approximate streamline with aluminium sheeting, brace the wings. The lower chassis mast is streamlined in the same fashion, and to further decrease resistance, disc wheels are fitted to the landing gear. This section of the machine resembles closely that employed by the Antoinette. Its action, however, is

quite different. The two landing wheels are carried one at each end of a pair of axles which meet together and are pivoted at the main chassis mast. Considering one half of the chassis, the axle and the chassis mast form two sides of a triangle, of which the third side is formed by a unit which resists compression. This unit is composed of a pair of tubes one sliding inside the other. One end of the lower tube is pivoted to the axle, the upper end of the top tube is pivoted to the chassis mast, and the two free ends connected by rubber shock-absorbers. Two radius rods of Duralumin are provided to take the landing "drift."

*Main characteristics:—*

Overall length	...	38 ft.	Speed	...	75 m.p.h.
Span	...	42 ft.	Weight of machine without com-	...	
Area	...	310 sq. ft.	plement or fuel...	...	1,250 lbs.



## The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

### British Empire Michelin Cup No. 1.

*(Under the Competition Rules of the Royal Aero Club.)*

The winner of the prize of £500 for the year 1912 shall be the competitor who, on or before October 31st, 1912, shall have remained the longest time in the air on an aeroplane in one flight without touching the ground. The flights may only be made between the hours of sunrise and one hour after sunset, and in order to qualify for the prize the competitor must make a continuous flight of at least five hours.

The entrant, who must be the person operating the machine, must be a British subject, flying on a British-made aeroplane, must hold an Aviator's Certificate, and must be duly entered on the Competitor's Register of the Royal Aero Club.

Rules and entry forms can be had on application to the Club.

### British Empire Michelin Cup No. 2, £600.

*(Under the Competition Rules of the Royal Aero Club.)*

The contest for the current year consists of a cross-country circuit of about 186 miles. Competitors may choose their own course, which must be previously approved by the Club. The competition is now open, and the rules and entry forms can be obtained from the Royal Aero Club.

### Flights over the Sea.

The attention of aviators is particularly drawn to the following regulation:—

Aviators are prohibited from attempting flights over the sea, beyond the three-mile limit, unless suitable precautions have been taken to render their aircraft capable of flotation.

### French Hydro-Aeroplane Meeting.

A Hydro-Aeroplane Meeting will take place on August 24th, 25th, and 26th, 1912, in the Bay of St. Malo. 41,000 francs are offered in prizes, and, among other events, there will be a Hydro-Aeroplane race, on August 26th, from the Bay of St. Malo to the Isle of Jersey and back.

### Presentation to Library.

Dr. W. J. S. Lockyer has very kindly presented a copy of his book "Report of the Solar Eclipse Expedition to Vavau, Tonga Islands, April 29th, 1911 (Eastern date)" to the Library.

### Aviation Lantern Slides.

The Royal Aero Club has acquired a large collection of lantern slides dealing with aviation, and members can hire these at a nominal fee.

In order to make the Club collection more complete, the Committee will be glad to receive gifts of slides, and negatives or photographs from which slides can be made.

166, Piccadilly.

HAROLD E. PERRIN, Secretary.

## MR. LINDSAY CAMPBELL'S ACCIDENT.

It is a most regrettable incident that has to be chronicled of a sad accident to Mr. Lindsay Campbell on Saturday morning while flying a 50-h.p. Bristol monoplane at Brooklands. Mr. Campbell had some weeks previously taken his *brevet* upon a biplane, and was staying at Brooklands with the object of learning to fly the monoplane. He had on the previous evening made a remarkably good flight upon the same machine, flying a couple of circuits of Brooklands at about 600 ft., terminating with a splendid landing. On the next morning, Saturday, he was allowed to take the machine up again, and was flying his second circuit at about 500 ft. when he was seen to get into difficulties. His engine stopped (and it appeared to onlookers that he had switched off), and naturally the machine lost way and side-slipped. Mr. Campbell then did the right thing by diving, and, as it appeared, regained proper control, but he was not able to get his engine going again and so had to come down, with the result that he smashed upon landing. The machine was not smashed as badly as the accident would make one believe, as the whole of the pilot's seat and surroundings of fuselage were perfectly intact. Poor Campbell did not survive, though many pilots have stepped out of much worse smashes with a smile. The good fellow was fatally injured through being thrown with such force against the padded cross member of the fuselage with the result that his chest was badly crushed with internal damage.

It is so very regrettable an accident from points other than personalities, as Mr. Campbell was not only a marked favourite at several aerodromes amongst everyone who knew him, but he was

also in this country learning to fly in the interests of aviation in general, as he had been commissioned by the Australian Commonwealth to take a leading hand in the founding of aviation for the Australian Army, and when speaking to him upon the subject he was always enthusiastically optimistic upon the success they were going to make out there. It is a curious coincidence that he obtained his Royal Aero Club certificate on his 49th birthday—May 19th. He will be a great loss to the Commonwealth, not so much as a flyer, but as an excellent organiser and hard worker. A man of iron nerves, and always ready to give a helping hand to anyone. Everyone's sympathy is extended to his wife and two children (one 4 years old, the other 16 months) who are his only relatives in this country, and who cannot as yet realise the irreparable loss they have sustained. Mrs. Lindsay Campbell is staying at 71, Shirland Road, Maida Vale, W.



### An Aerial Post in France.

In connection with the visit of the French Ministers to Nancy last week, an aerial post was arranged. Special stamps at 25 centimes each were sold for the benefit of the local hospital, and these, together with the ordinary stamps, were affixed to the letters and postcards, which were then done up in three sacks. After waiting on the weather for a couple of days, Lieut. Nicaud, on the 31st ult., took them, together with his mechanic, on his Maurice Farman biplane from Nancy to Luneville, a distance of 28 kiloms., in 17 mins.



## FROM THE BRITISH FLYING GROUNDS.

### Royal Aero Club Eastchurch Flying Ground.

THE past week has, without doubt, been the worst yet experienced this summer, the weather being far more like mid-winter, heavy gales and rain predominating; consequently very little work has been done outside the sheds.

On Thursday, Commander Samson on the Short monoplane, Lieut. Grey, 70-h.p. Tractor, Lieut. Briggs, and Private Edmunds all put in some useful flying during the two hours that was available.

On Friday, the new Admiralty Breguet arrived in its crate, and is awaiting the Breguet pilot to put it through its necessary tests. Commander Samson, Lieuts. Grey, Malone, and Briggs were flying during the evening.

Early on Saturday morning, Lieut. Briggs and Mr. Jezzi were out, but found the fog more than pleasant, and so waited until later in the day before attempting further flights; about 10.30 Lieut. Grey with Lieut. Briggs as passenger prepared for a start to Dymchurch, but finding the air very "dunty" delayed the start until the evening, when Lieut. Grey made the journey. Lieut. Gregory took out the school biplane 34, and put in some good work around the island at a height of some 800 ft.

On Sunday, the weather was again unbearable, and no flying was done. On Monday evening, the Henry Farman with new 80-h.p. Gnome engine arrived from France *en route* for Hendon with M. Noel piloting.

Tuesday again treated us to a 40-mile wind, and consequently up to time of writing nothing had been done.)

### Brooklands Aerodrome.

MONDAY and Tuesday last week were two useless days from a flyer's point of view, owing to there blowing a continual gale. Wednesday morning slight wind, but school work continued in earnest.

At the Bristol School Mr. Merriam was out early taking up in rotation Major Ashmore, Capt. Brabazon, Mr. Summerfield, and Mr. Gould, the other pupils staying in bed, possibly thinking the weather too bad. Mr. Bettington, Mr. Pickles and Mr. Merriam all flying straights upon the Anzani monoplane, Lieut. Arthur and Mr. Hotchkiss flying well upon the 50-h.p. monoplane, the former flying to 4,000 ft.

Sopwith's School were out very early and Major Trenches was sent away for his *brevet* which he took in excellent style.

At Vickers No. 5 machine was out in the hands of Capt. Beatty. Wednesday night and Thursday morning there was a gale blowing and no flying in consequence.

Thursday evening wind had dropped considerably. Mr. Hotchkiss brought out a new 70-h.p. 2-seater monoplane to be put through its

tests before being handed over to a foreign Government. Mr. Hotchkiss first tried it solus, and finding it all right, took up a foreign officer, who was to observe its flying abilities. The first test was to rise 1,000 ft. in 5 mins., with a weight of 225 kilogs. on board, and Mr. Hotchkiss started off with 248 kilogs. up, and rose to 1,000 ft. in 4 mins., and 2,000 ft. in 7½ mins. Flying at that height for 10 mins., the engine was completely shut off and a long, straight *vol plané* made to ground. Engine again started, and Mr. Hotchkiss again rose to 20 metres and shut off engine and landed, then up to 50 metres and shut off engine and landed, then straight away up to 2,000 ft., again under 8 mins., flying at that height for another 10 mins., then landing with another long straight *vol plané*. On the Saturday morning Mr. Hotchkiss went away again on the 70-h.p. monoplane to finish off its tests with a flight of 1½ hours. With the same officer in the passenger seat the machine rose quickly out of Brooklands and at once got lost in the fog. Mr. Hotchkiss circled round for some time in the hopes of picking up Brooklands again, but being unable to do so, steered off in the direction of the Thames which was picked up at Windsor. Then he made a mistake and followed the river's course the wrong way as far as Maidenhead, at which town, noticing the mistake, he circled round and again ran into fog and lost the river. Flying by the course of the sun he then found the reservoirs at Staines and mistook them for the reservoirs at Richmond, and again went the wrong direction until High Wycombe was reached where, after flying for an hour and twenty minutes, never dropping below 2,000 ft., Mr. Hotchkiss made a landing on the top of a hill, to find out where they had got to. After breakfast the wind got up too much to allow them to make a fresh start, so Mr. Hotchkiss decided to postpone the start till the evening. At Brooklands much good flying was put up on the Friday evening. Lieut. Arthur, Messrs. England, Pickles, Barnwell and Lindsay Campbell were all flying the Bristol 2-seater monoplane in very good style. Prince Cantacuzene was on the Anzani monoplane and so was Mr. Cheesman.

At the Vickers School Mr. Knight was flying circuits on No. 5 machine for about 20 mins. Capt. Stott, a new pupil, was out on No. 4 taxiing, when he amused everyone present by standing the machine on her nose in front of the sheds, breaking propeller and skid. The Martin Handasyde with Antoinette engine was out flying for some 20 mins. with Mr. Bell on board. Capt. Beatty was out on No. 5 Vickers to try the weather conditions. Did two straights and found it too "puffy." A little later, the wind having moderated, Capt. Beatty again went out to test the machine and then handed it over to Knight, who was up for 45 minutes, doing wide circuits over the surrounding country about 600 ft. up, and putting up an exceedingly good performance. Capt. Beatty then took over the machine and put in a lot of good circuits.

Saturday morning, a lovely morning for flying, saw the Bristol School out in full force. Mr. Merriam was out first to try conditions, then away with many of the pupils. After Mr. Hotchkiss went away on the 70-h.p. monoplane, Lieut. Arthur took up the 50-h.p. monoplane and found everything perfect, so then let Mr. England fly solos on same machine. Mr. Lindsay Campbell then went next on same machine, and when over Byfleet, met with the most regrettable fatal accident chronicled elsewhere.

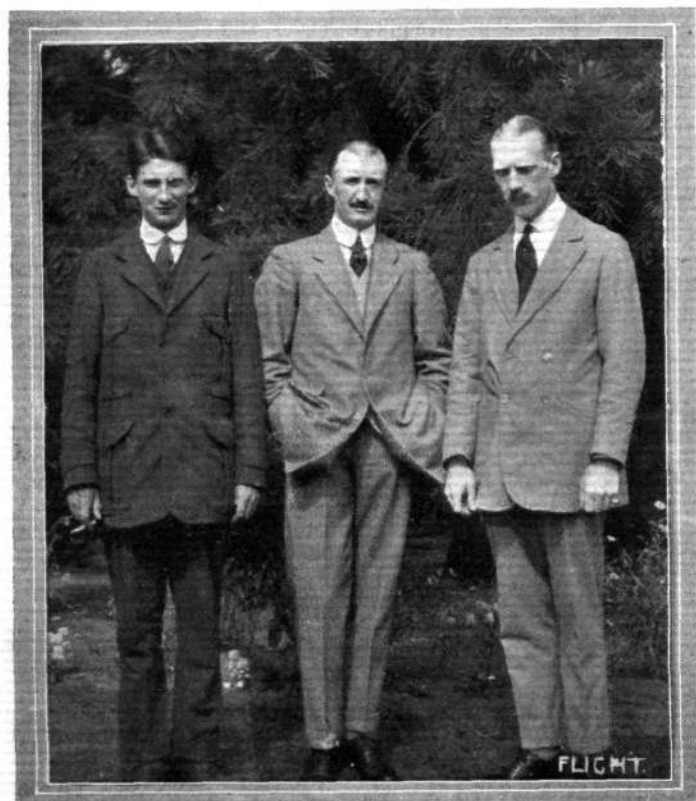
Saturday evening and Sunday and Monday morning a gale blowing continually. The cross-country race advertised for Monday evening was also cancelled through weather, but later in the evening a fairly large crowd saw Mr. Merriam, who carried a passenger, fly a couple of circuits. Mr. Pashley then came out on the Sommer for a couple of circuits, and Mr. Hotchkiss also flew a circuit just before the rain set in.

### Farnborough (R.F.C.)

TUESDAY evening last week, Major Burke out on BE 1 in very strong wind, making good landings. Wednesday morning early, Major Moss 10 mins. flight on Henry Farman, Major Burke several flights on BE 1, Mr. de Havilland on BE 4, later out on BE 3, testing machine after being rebuilt, a very gusty wind blowing all the time.

Towards evening, Thursday, wind dropped considerably, Major Burke on BE 1, Capt. Mackworth on BE 4, several good flights, Mr. de Havilland on Breguet B 3, Major Moss and Capt. Reynolds several good flights on Henry Farman, Adjutant B. Kennett several flights on 70-h.p. Nieuport; all machines very busy, and in the air at the same time. Also airship "Gamma" several flights.

Friday morning early, Major Moss and Capt. Reynolds on Henry Farman, Major Burke on BE 1, Capt. Mackworth on BE 4, all flying well and carrying passengers. Mr. de Havilland on Breguet B 3 doing some very good flying, later same pilot out on factory experimental 'bus, testing Maxim gun machine, quite steady when firing gun. Airship "Gamma" several flights. Adjutant B. Kennett left for Salisbury on 70-h.p. Nieuport, making good time; all machines out again in the evening. Lieut. Fox, who can fly any



A trio of Bristol School pupils at Brooklands who have just taken their *brevets*—Mr. Holyoake, Major Higgins, and Capt. Macdonald.





Three more Bristol School men who have secured their *brevets*—Capt. Nicholas, Lieut. Atkinson, and Mr. Pickles.

type of Army machine quite well, made several flights on factory 'bus. Lieut. Longcroft several flights on BE 4, one flight at 1,000 ft., Capt. Rayleigh on Breguet B 3, Mr. de Havilland on BE 3, Capt. Reynolds on Henry Farman while taxiing on flying track broke propeller.

Early Saturday weather good but misty. Major Burke on BE 1, Capt. Mackworth on BE 4, Lieut. Longcroft on BE 3, all flying well. Mr. de Havilland on factory 'bus, later on Breguet B 3. Fine exhibition of flying Monday by Mr. de Havilland on BE 2. Watched by a large crowd of visitors. Tuesday early Capt. Rayleigh on Breguet B 3, Major Burke and passenger on BE 1, Major Moss on Henry Farman, all flying well in spite of gusty wind.

#### London Aerodrome, Collindale Avenue, Hendon.

**Grahame-White School.**—Half a gale most of the past week, so not very much doing.

Wednesday morning gusty, but calm compared with previous days. School out at 4.15 and Mr. Cholmondeley and Capt. Salmond out for circuits. Then Mr. Wynne went for straights with Mr. Blackburn, followed by Commander Yeats-Brown *solus*. Then Mr. Cholmondeley and Capt. Salmond out for their *brevet* tests, both passing on No. 7—good work this, for No. 7 is an extra strong school machine, and is very heavy. After this, Lieuts. Allen and Stopford out for straights with Mr. Blackburn.

School out at 7.40 Thursday evening. Lieut. Rathborne, Mr. Wynne, Lieut. Allen, Lieut. Stopford and Mr. Fuller up in turn with Mr. Blackburn for straights.

Friday, school out at 6.20 a.m., when fog cleared. Lieut. Rathborne making good straights, followed by Mr. Wynne and Lieut. Stopford, also doing straights alone. Then Lieut. Allen attempted same for first time, but was rather unsteady and finished with a "pancake," which drove chassis into lower plane—machine in fact suffering pretty badly.

**Blériot School.**—In between showers of rain, the school managed to put in a small amount of work on Friday evening last week. Messrs. Hall, Sacchi and Welburn each doing straights on LB 2. Next day no school work possible outside, but Mr. F. M. T. Reilly, a new pupil, was trying the controls of the machines inside the sheds, prior to doing more active work outside as soon as the weather improves.

**Deperdussin School.**—No flying Monday and Tuesday last week, too wet and windy. Wednesday morning, Lieut. Tucker, Mr. Andrews, and Lieut. Hooper all out on taxi for about 20 minutes. Lieut. Hooper got tail too high and broke skid and propeller. No flying in evening because of wind.

Thursday again no school work, too windy, but next day Lieuts. Brock and Harrison each did six straight flights on *brevet* machine. Very good neat landings. Mr. Hooper and Lieut. Andrews each did three turns on taxi, both making excellent progress. Lieut. Gill doing circuits on racer and trial straights on *brevet*.

In the evening Lieuts. Brock and Harrison doing good straights on *brevet* for half an hour. Lieuts. Hooper and Andrews both doing good work on taxi. Lieut. Gill trial run on *brevet*.

Saturday, Lieuts. Brock and Harrison doing right and left-hand turns on *brevet*, and making excellent progress. Lieuts. Hooper, Andrews and Hawker three turns each on taxi. All doing well. Lieut. Gill four circuits on racer, and trial run on *brevet*.

Monday and Tuesday, no flying, too windy.

#### Salisbury Plain.

**Royal Flying Corps.**—On the evening of Tuesday week Capt. Hamilton was out on the Deperdussin and did several circuits with passengers. He was followed by Major Brooke-Popham on the Avro biplane, also making several circuits with passengers. These same officers were doing similar work on Wednesday morning. No further flying was possible until Thursday evening when Major Brooke-Popham made a short trial on the Avro.

On Friday morning Major Brooke-Popham started work on the Avro biplane taking up several passengers and the next out were Capt. Hamilton on the Deperdussin and Lieuts. Hartree and Porter and McCudden on biplane F 7. The Nieuport monoplane B 4 arrived from Farnborough piloted by Barrington-Kennett with a passenger, the time for the trip being 35 minutes. Capt. Hamilton afterwards made three further flights with passengers and Adjutant Barrington-Kennett went for a long trip on the Nieuport with a passenger. Serjt. Ridd made a wide circuit on biplane F 7, and Major Brooke-Popham several passenger trips on the Avro. Lieut. Conner had a run on the Nieuport B 4 around Bulford Camp, Salisbury, and the outskirts of

Devizes. McCudden finished the day's work with a flight on biplane F 7. On Saturday morning Lieut. Conner with a pupil flew to Knighton flagstaff on B 4 Nieuport. Lieut. Hartree made one flight on F 7, and Lieut. Porter made several on it, in one with Lieut. Hartree as passenger, going over to Tidworth and back. While taxiing the machine back, the left aileron caught a post and was broken and so put an end to flying until the evening, when two Maurice Farman biplanes, one equipped with a quick-firing gun, arrived from the Central Flying School. One of these machines flew back late in the evening, when Capt. Hamilton was out on the Deperdussin and Major Brooke-Popham on the Avro biplane.

There was no flying on Sunday or Monday morning, but in the evening Major Brooke-Popham made one five minutes' flight on the Avro, but it was too windy for further outdoor work.

On Tuesday morning, Capt. Hamilton on the Deperdussin, Major Brooke-Popham on the Avro, and Lieut. Porter on F 7 all made some good circuits.



"Flight" Copyright.

Sig. Jules Nardini, who is now well known through his fine flying at Hendon.

## Upavon Central Flying School.

HEAVY rains at Upavon during the past week gave very little opportunity for flying, and only on one day was flight attempted. Early on Friday morning Lieut. Longmore flew the Short 44 with S.-Serjt. Thomas as passenger. Capt. Fulton then made a solo on Avro 1, being followed shortly after by Lieut. Longmore on Short 44 with E. R. A. O'Connor as passenger. Capt. Fulton then made a short flight with A. M. Cowton on Avro 1, and on his return the machine was taken out by Lieut.-Col. Cook who rose rapidly to a height of well over 1,000 ft. and then made a very successful *vol plané*. Lieut. Longmore took out the new Maurice Farman biplane,

carrying as passenger Serjt. S. Yabsley, this being the first opportunity of using the machine since its arrival from Farnborough. He afterwards left for Larkhill on the Maurice Farman, accompanied by Capt. Broke-Smith, arriving back at the school about 8.30 a.m. A strong wind prevailed towards the evening, but Capt. Fulton made two flights on Avro 1 and Col. Cook one flight. Lieut. Longmore made one flight on Short 44 taking O'Connor for instruction.

Saturday Lieut. Longmore made one flight on Short 44, taking up O'Connor, in morning. In afternoon he flew Maurice Farman over to Larkhill, returning in evening.

## BRITISH NOTES

### THE ROYAL FLYING CORPS.

THE following notice appeared in the *London Gazette* of the 2nd inst. :—

**Special Reserve of Officers. Royal Flying Corps. Military Wing.**—Charles G. Bell to be Second Lieutenant (on probation). August 3rd, 1912.

The following appointments were made by the Admiralty on the 4th inst. :—

Assistant Paymaster G. S. Frewin to the "President," additional, for Central Flying School, to date August 16th.

**Royal Marines.**—Lieutenants C. E. Risk and I. T. Courtney, to the "President," for course of aviation at Central Flying School, to date August 17th.

### Crossing the Channel with Two Passengers.

AFTER being weatherbound at Douai for several days, Mr. W. Moorhouse on Sunday morning succeeded in piloting a Breguet biplane across the Channel, accompanied by his wife and a friend. After a preliminary trial, a start was made at 6.30 and a course set for Arras and Montreuil. The coast was then followed to a few kiloms. short of Boulogne when the machine was headed out over the sea. The French Coast was left at 7.47, and after passing through two rainstorms the British shore was crossed near Dungeness at 8.18. Across Romney Marsh the atmosphere was in a very troublous condition, and a landing was resolved upon. This was only effected with difficulty at Bethersden, about six miles west of Ashford, when the machine was damaged by being blown on to some trees, one of which was torn up by the roots. The machine was dismantled, and the party proceeded to London by motor.

### The "Missing" English Aviators.

IT turned out that the two English aviators who were reported by the Press to be missing, were none other than Mr. R. T. Gates and M. Louis Noel, of the Grahame-White Aviation Co. As a matter of fact, they were quietly waiting on the weather near Buc in order to bring over a new Farman hydro-aeroplane, of which they had taken delivery on the 27th ult. They made a start for London at 3 a.m., but after an hour's flying were forced down by the wind at Grandvilliers. They made a fresh start on the 31st ult., and after a stop at Hencourt got to Boulogne, where floats were fitted to the machine in anticipation of the cross-Channel trip. On the 3rd inst., they made a trial trip to Ambleteuse and back, but the conditions were not good enough for the cross-Channel trip. On Monday, the machine arrived at Eastchurch by way of the air *en route* for London.

### Mr. Cody Awarded £5,000 for Kites.

WE congratulate Mr. Cody upon the result of the arbitration proceedings before the Lords Commissioners of the Treasury whereby he has been awarded £5,000 as compensation in respect of his man-lifting kites which form part of the equipment of the British Army. It is also good hearing to know that Mr. Cody has given an undertaking not to communicate his invention to any foreign government.

### The Million Shilling Fund.

WE understand that very encouraging support for the million shilling fund of the Aerial League is being received from the provinces, and the active sympathy of the Lord Mayor of London, Sir Thomas Crosby, has doubtless emphasised the importance of the movement. Those willing to assist either as collectors or local Hon. Secretaries should communicate with General A. T. Arbuthnot, National Aviation Fund, 6, Coventry Street, London.

### A Caudron at Portobello.

ON August 1st Rene Caudron paid a visit to Portobello and made some flights in the neighbourhood of Edinburgh on a Caudron

## OF THE WEEK.

biplane purchased by Mr. G. S. Wilson. The machine was subsequently piloted by Philip Marty, a 19 year old pilot from the Caudron school.

### The East Coast and Aviation.

THE proposed visit of Mr. Grahame-White and others to Clacton, as well as the building of an aeroplane locally, has aroused a good deal of enthusiasm for aviation in the neighbourhood. It has been suggested that next year a race should be organised from Hendon to Yarmouth and back to Clacton, with controls at Felixstowe and Lowestoft. An endeavour is being made to raise a prize fund of £400 between the four seaside resorts mentioned. It is a bright idea, and should find strong support without difficulty.

### Presentation to Vivian Hewitt.

THE presentation to Mr. Vivian Hewitt in recognition of his flight from North Wales to Dublin was made at Rhyl on August 1st. The presentation took the form of an illuminated address from the residents of Rhyl, and a silver cup of Irish pattern from the visitors. Mr. Hewitt's mechanics, S. I. Wingfield and A. Brown, were not forgotten, and each received a gold medal. The presentation was made by Councillor Buckley Jones, Chairman of the Rhyl Urban Council, while Mr. J. Hales, of Leicester, presented the visitors' cup. In returning thanks, Mr. Hewitt said he intended to make Rhyl his home, as he found the sea front a most suitable aviation ground.

### The Daily Mail Demonstrations.

ON Wednesday of last week the weather conditions prevented any work with the hydro-aeroplanes, but at Northampton M. Salmét, on his Blériot, made a very fine flight in the twilight. Mr. Hamel also went on from East Boldon, near Sunderland, to Gosforth Park, by Newcastle-on-Tyne, where he gave a demonstration later in the day.

The better weather on the following day, Thursday, enabled quite a lot of flying to be done at the various points. M. Fischer made a number of passenger-trips at Teignmouth, Devon, but no flying was possible at Eastbourne. At Lincoln, Mr. Hucks flew over the Castle and round the Cathedral, and in the afternoon did some high flying, getting up to 5,400 ft., and then landing by a fine *vol plané*. M. Salmét flew through a rainstorm from Northampton to Colchester, and gave some exhibitions later in the day. On Friday, Mr. Grahame-White was testing his new Paulhan-Curtiss hydro-aeroplane and went over to Eastbourne from Brighton, while Mr. Travers, on the Farman, paid a visit to Bexhill and St. Leonards and going on to Eastbourne later. Among the passengers taken up by Mr. Grahame-White was Mr. H. G. Wells. M. Salmét gave an exhibition at Colchester and flew to Brightlingsea, Clacton, Frinton and Walton-on-Naze, returning to Colchester via Thorpe and Bentley.

Saturday saw Mr. Hucks at Gorleston and he made three trips along the shore over Great Yarmouth and out to sea. In one he planed down from a height of 3,500 feet to within a short distance of the Britannia Pier. M. Salmét went on to Southend making his headquarters at Prittlewell, and his trip of five minutes along the sea front, like those of Mr. Hucks at Yarmouth, created a tremendous amount of enthusiasm among the crowds of holiday makers. Mr. Grahame-White and Mr. Travers, after giving several passenger trips at Eastbourne, flew their machines over to Cowes. Mr. Hamel commenced his tour of the Isle of Man, with a 23 mins. trip at Douglas. The bad weather on Monday considerably curtailed flying, but Mr. Grahame-White gave an exhibition at Cowes, and flew round the Royal Yacht, and Mr. Travers also made a flight. At Southend, M. Salmét, despite the windy weather, made three good trips along the front, while at Gorleston, Mr. Hucks fought his way through the wind and rain to Lowestoft and back. Tuesday saw Mr. Hamel at Peel, having flown over from Douglas, after giving an exhibition on his Blériot in a 25 mile an hour wind. At Torquay, M. Hubert made a couple of short trips on the Farman hydro-aeroplane.



## FLYING AT HENDON.



Marcel Desoutter flying at the London Aerodrome, Hendon.

"Flight" Copyright.

"WEATHER and other circumstances" did not permit the excellent programme that had been arranged for the Third London Aviation Meeting to be carried out in full. Nevertheless, the holiday crowds that visited the aerodrome on each day certainly had value for their money in the way of exhibition flights.

On Saturday, at 3.30 p.m. sharp, Marcel Desoutter came out on the 50-h.p. Gnome-Blériot and put in a number of high circuits of the aerodrome, with a *vol plané* inserted now and again by way of variety. This first flight lasted about forty minutes, and after a short interval, H. J. D. Astley went up for a short time on the same machine. At 5 o'clock, Desoutter gave another exhibition flight of about half an hour's duration—and a magnificent display of flying it was too. It was certainly the best bit of work this young pilot has done, and there is no doubt that he is entitled to rank amongst our foremost aviators; but it is to be hoped that he will not indulge in too much trick flying.

In this particular flight he flew alongside the enclosures some 15 or 20 feet high, and from time to time he raised both hands above his head. It was surely an unnecessary thing to do, but the spectators seemed to appreciate it, and signified their approval enthusiastically.

Just before 6 o'clock Jules Nardini went up for a trial spin on his Deperdussin, and Desoutter also took a turn or two at the same time. A test speed handicap was then arranged between these two, Nardini giving Desoutter 20 secs. start over four laps of the aerodrome. The result of this little match was a win for Desoutter, who covered the course in 6 mins. 25 secs., against Nardini's 6 mins. 42 secs. Another match was started immediately after, this time Desoutter made a flying start and Nardini a standing start. Nardini got in first this time, 2½ secs. in front of Desoutter.

By this time the Howard Wright biplane, at which mechanics had been at work the whole afternoon, was ready for a trial, so Lewis Turner made a short flight across the ground. After this the dispersing bombs were fired and the first day's meeting closed.

A large number of people—well over 6,000—turned up at the

ground on Monday, but it was far too windy for any of the races to take place, and it was not until later in the day that conditions were favourable enough for a few exhibition flights to be put up. The first away was Maurice Prevost, who is taking part in the Military Trials at Salisbury, on a 50-h.p. Deperdussin monoplane of the Military single-seater type. A little later on Turner had the biplane out, but found things not a bit to his liking.

Further exhibition flights were given by Prevost and Nardini on Deperdussin monoplanes, Desoutter on the Blériot and Turner on the biplane, the latter also doing some passenger carrying. Later in the evening Mr. T. Sonoda, a Japanese, brought his biplane—built to his designs by Messrs. Handley Page, Ltd.—out for a trial, and the machine succeeded in making a short flight.



## AERONAUTICAL SOCIETY OF GREAT BRITAIN.

## Official Notices.

**Wilbur Wright Memorial Fund.**—The following subscriptions have been received:—Amount previously acknowledged, £475 19s.; Griffith Brewer, Esq. (2nd donation), £10 10s.; Messrs. Handley Page, Ltd., £10 10s.; F. S. Lahm, Esq., £2; B. E. Dunbar Kilburn, Esq., £1 1s.; Seymour Nation, Esq., 5s.; Joseph Obermeyer, Esq., £1.6 Total, £501 5s. :

## Modern Meteorology.

WHAT a comfort it is that folk can now, by watching the forecasts in the daily press, make their arrangements for the day in perfect confidence as to the result. The following is an instance from Monday's weather report in one of the leading morning papers. How grateful must those be who grasped the situation:

"To-Day's Forecast.—The aspect is unsettled, as a disturbance over England is causing rain generally, but the general outlook for to-day is better than it would have been had the disturbance which passed over the country yesterday been approaching last night."



# FOREIGN AVIATION NEWS.

## Long Flights at R.E.P. School.

FOR the first test for his superior *brevet*, Lieut. Bruguere on Saturday last flew from Buc to Troyes and back, his R.E.P. machine averaging a speed of 105 kiloms. an hour. Lieut. Campagne and Granel each made flights of two hours' duration on the same day. On Monday Granel was flying for two hours at a height of 1,000 metres and went to Chartres and back. Molla was meanwhile flying over Buc, Chateaufort, Versailles and the neighbourhood.

## Etampes to Sissonnes in 1 hr. 40 mins.

RETURNING to their headquarters on the 2nd inst., Sergeant Perretti and Sapper Letort, each on a two-seater, side by side, Blériot, went from Etampes to Sissonnes Camp, a distance of 210 kiloms., in 1 hr. 40 mins.

## A New French Aviatress.

MADAME PALLIER qualified on her Ae.C.F. pilot's certificate in somewhat sensational style at Villacoublay on Saturday last. She started off on her Astra biplane, but instead of keeping over the aerodrome, surprised her observers by flying off in the direction of Paris. She circled round the Eiffel Tower and over the Chamber of Deputies, and then returned to Villacoublay to complete the tests.

## Long Reconnaissances at Pau.

FROM the military Blériot school at Pau Sergeant Laurent made several long reconnoitring flights last week. On the 30th ult., taking Lieut. Armengaud as observer, he was up for two hours watching the operations of the artillery of the Tarbes garrison. The pair made a lengthy scouting trip along the Orthez valley on the 31st, and the next day they were up again for a couple of hours.

## French Army and Automatic Warping.

UNDER the control of Commandant Renaud, chief of the French military aeronautic laboratory at Chalais-Meudon, tests have recently been made with the Baligout automatic warping system, and it is said to have given satisfaction.

## A Round Trip on a Nieuport.

SAPPER MARMIER and Levasseur on the 1st inst. on a Nieuport monoplane went over a circuit Mourmelon-Rheims-Epernay and back, taking an hour and a half for the round trip.

## A Silent Astra Biplane.

TESTS were carried out at Villacoublay on the 1st inst. with a silencer which it is proposed to fit to the motors of Astra machines. With Labouret in charge the test machine was flown at a height of 100 metres when practically no noise could be heard from the motor by the observers on the ground.

## New Deperdussin Superior Pilots.

FOUR more French officers and two non-commissioned officers are qualifying for superior *brevets* at the Deperdussin school at Betheney. On Sunday Capt. Estirac, Lieut. Degorge and *sous-officiers* Verdier and Chauroux made flights of an hour and a half at a height of 500 metres, and Lieut. Rabisson, for his first event for superior *brevet*, went over the course Rheims, Vouziers, Mailly Camp and back to Rheims. Lieut. Mortureux completed his tests by flying back from Amiens.

## Dictatophones for Aeroplanes.

IT is stated from Paris that experiments are to be conducted with a view to ascertaining whether it will be possible to adapt the dictatophone for use by aerial scouts. The idea is that although the pilot has his hands occupied with the controls and so cannot write down his observations he may speak them into a dictatophone mounted on his back and the record may be reproduced when he lands. The experiments, if successful, should be of vast benefit to the industry.

## French Team for Gordon-Bennett Race.

THE Aero Club of France has nominated Jules Vedrines (Deperdussin), Maurice Prevost (Deperdussin), and Andre Frey (Hanriot) to represent France in the forthcoming Gordon-Bennett race in America. Busson (Deperdussin) and Liger (Morane-Saulnier) have been named as reserves. The race is fixed to take place at Chicago on September 9th.

## St. Cyr to Mourmelon on a Sommer.

LEAVING St. Cyr on his Sommer monoplane, on Sunday morning, Bathiat went over to Issy. He left there at a quarter to six in the evening, and landed safely at Mourmelon at 7.18. On the previous day he had flown from Mourmelon to Issy and then on to St. Cyr.

## The Michelin Target Prizes.

IN the tests for the Michelin Target Prizes at Chalons Camp on Sunday morning, Lieut. Varcin on a Farman and Gaubert on an Astra Wright each got four shots on the target. Lieuts. Bosquet and Battini also started, but had to land again owing to the bad weather.

## In Honour of Mouillard.

CAIRO is following the example of Le Mans in naming a street in memory of Wilbur Wright. The pioneer to be so honoured is Louis Mouillard, and the "rue Louis Mouillard" will keep green the memory of this painstaking student of bird flight, who spent a good deal of his life in Egypt.

## Rheims to St. Cyr in 80 mins.

ALTHOUGH the conditions were none too good, Lieut. Germain on Monday morning left Rheims for Paris, and reached St. Cyr in fine style after an hour and twenty minutes flying.

## Orleans to Compiègne on Clement-Bayard Monoplane.

ON the Clement-Bayard all-steel monoplane, Bobba on Saturday last went from Orleans to Juvisy, and later continued his journey to Compiègne.

## Touring on a Farman.

HAVING taken delivery of his new Maurice Farman biplane, the Marquis de Lareinty-Tholozan has arranged to make a tour on it. He made the first stage from Buc to Trouville on the 3rd inst. in two hours ten minutes, including two stops.

## Pilots in Hydro-aeroplane Competition.

THE pilots named for the hydro-aeroplane competition to be held by the Automobile Club of France at St. Malo, on the 24th, 25th and 26th inst., are: Barra (Paulhan), André Beaumont (Donnet-Lévêque), Jean Benoist (Sanchez-Besa), G. Busson



Capt. Conneau (Beaumont) on his "Donnet-Léveque" in full flight over the Seine in connection with his Paris to London river and sea flight.

(Deperdussin), Chambenois (Borel), Molla (R.E.P.), Mollien (Paulhan), Eug. Renaux (Maurice Farman), Train (Astra-Train), Weyman (Nieuport).

#### The Ae.C.F. Criterium.

THE rules for the Criterium have now been issued by the Aero Club of France. They state that the course must be at least 10 kiloms. round, and may be situated either in France or Algeria, and that the minimum distance to be covered without a stop is 750 kiloms.

#### A Sommer Hydro-Aeroplane on Lake Geneva.

A SOMMER hydro-aeroplane, fitted with an 80-h.p. Salmson-Canton-Unne motor has been in great demand for passenger trips over Lake Geneva. Its headquarters are at Evian and the pilot is Burrin. On the 2nd inst., he was flying for two hours.

#### A Fatality at Doeberitz.

SERGT. LACHMANN, the first German non-commissioned aviator, met with a fatal accident at Doeberitz on the 30th ult. In a fall of about 15 metres he sustained such injuries that he died in hospital without regaining consciousness.

#### An International Meeting at St. Petersburg.

IT is announced that the Imperial Aero Club of Russia is organising an International meeting to be held at St. Petersburg next month. The prize list amounts to £4,000 at present.

#### An Australian Race.

THE postponed race between W. E. Hart, the Australian aviator, on a Bristol biplane, and A. B. Stone, on an American-built copy of a Blériot, was held on June 29th. The course was from the Surry football ground at Sydney to Parramatta, a distance of 14½ miles, and the arrangement was that the two were to start with an interval of 10 mins. between them. Hart won the toss, and got away first in fine style. He covered the course in 23 mins. 53 secs., and landed in the Parramatta Park. Stone lost his way, and mistaking the St. George's river for the Parramatta, landed at Belmore, after being in the air for half an hour.

#### American Aviators Suspended.

FOR taking part in an unsanctioned meet at Boston on June 29th, Lincoln Beachy, Glen L. Martin, Charles K. Hamilton, Philip W. Page, Farnum T. Fish, Paul Peck, Arch Freeman, and F. J. Terrill have been suspended by the Aero Club of America until December 31st, 1912.

#### An American Superior Certificate.

THE Aero Club of America, having come to the conclusion that the F.A.I. conditions for obtaining a pilot's certificate are not sufficiently severe, has decided to issue an "expert aviator's certificate." The regulations are now being drawn up, and it is stated that they will include a physical examination.



## AIRSHIP NEWS.

#### A New Russian Dirigible.

A NEW dirigible "Albatros" has just been built in Russia for the Russian Army, and she will shortly be undergoing trials. The envelope has a capacity of 10,000 cubic metres.

#### 2½ Hours' Trip by "Conte."

THE Astra dirigible "Conte" on the 2nd inst., with nine passengers on board, went for a trip of 2½ hours from Issy, and returned without incident.

#### Success of the New Zeppelin.

ON Saturday the new Zeppelin liner "Hansa" sailed from Friedrichshafen to Hamburg, a distance of 400 miles. The average speed worked out to 37 m.p.h., while the highest speed is said to have been 52 m.p.h. She will be stationed at Hamburg for a month for passenger trips.

#### Other Trips by Zeppelins.

THE "Victoria Louise" made a trip of three and a-half hours from Frankfort to Baden Oos on Saturday morning, while the "Z3" made a voyage of two and a-half hours round Metz.



Conducted by V. E. JOHNSON, M.A.

#### The Stability of Model Aeroplanes.

WE have on several occasions been asked if we do not consider that model aeroplanes possess more natural or inherent stability than full-sized machines.

The question is, in one sense, not an easy one to answer, because just how much natural stability a full-sized machine does possess is not a known factor, a practical one that is. Every full-sized machine carries a pilot, and possesses, as well, an additional stability factor as exemplified in the personal control of the same. One can scarcely imagine a live pilot, merely sitting in a machine like a dummy, while the machine is being tested for its stability factor; in other words the personal control element would, in all probability, come into play some time before the actual limit of recovery had been reached. The advent of the hydro-aeroplane renders it now possible for such a test to be applied to a full-sized machine on some large and isolated sheet of water such as the open sea. As to whether the experiment will ever actually be tried is another matter. In experiments with models, so far as they go, large models are somewhat more difficult to get correctly adjusted than smaller ones, especially if they are power driven, but when once this has been done, their stability is in no way inferior to that of one weighing as many ounces as the other does pounds.

Undoubtedly there are quite a number of full-sized machines whose stability factor is in all probability as good, or nearly as good, as that of some of the best models. There are one or two points which must, however, be carefully borne in mind. The most stable models (longitudinally) are of the elevator-in-front type; or, to speak more correctly, the easiest models to stabilise longitudinally are this type. This is a fact proved practically hundreds and hundreds of times. But is not this in itself a proof that this type is inherently or naturally more stable longitudinally than the tractor-type, or even than the tail-type model with propellers in the rear? A very important factor in the model stability problem is the question of speed, more especially in twin-screw hand-launched models of the flying-stick type; practically speaking, in many—probably it would not be too much to say in most—models of this type this is their only stability factor.

The question of stability is a very important one—in fact it would not be too much to say perhaps that it is the most important one, and we propose now devoting some attention to the subject—it is one on which quite a number of contributions of various kinds have reached us during the past six months, and with the chief of which we now propose to deal. There are, however, several preliminary considerations with which it will be necessary to set forth—these we will deal with in next week's issue.

#### Mr. A. B. Clark's Model Biplane.

We publish this week a photo of the above model, taken while in flight. The following are the chief dimensions of the model: 30 ins. long, 27 ins. span, it is driven by a pair of 9½ ins. laminated propellers. It is equipped with a substantial landing chassis, and rises from the ground from four small wheels. Average duration of flight 35 secs., and the distance some 250 yds. It is constructed entirely of split bamboo, as advocated by Mr. H. H. Groves and others, including the writer. The bamboo chosen should have as large a diameter as possible—it should not be under from 1½ to 2 ins. All joints should be silk bound. The planes in the model referred to are covered with jap silk, which is proofed by celluloid dissolved in amyl acetate. The objection to this proofing is that it loses its tautness in damp weather. The altitude to which the model rises is about 80 ft., and the gliding angle is good.

It is worthy of note that at the Wakefield competition not only was the winning machine a biplane, but that out of the first five, if we remember correctly, four were biplanes. One reason why the biplane found favour with some undoubtedly was that by using a biplane instead of a monoplane a means was thereby found of obtaining the necessary extra lift required for this year's increased weight, without increasing the span. An increase of span, to any great extent, necessitating a departure from the usual type of wire-frame.

#### Mr. C. C. Horner's Twin Screw Tractor Monoplane.

We also give some scale drawings of a novel and interesting twin tractor monoplane, designed and built by Mr. C. C. Horner (hon. sec. Macclesfield and District Aero Club). One of the chief points



about the model is the strong landing chassis at the front, which protects the propellers—the model not being broken even when once diving from a height of some 50 ft. Materials employed: wood, cane, wire, silk, &c., the model being built in the usual manner. The weight should run from  $2\frac{1}{2}$  to 3 ozs., complete. The average distance covered is about 100 yards—the machine being a very fast flyer; the duration being correspondingly short. The model is not shown with wheels—but has proved itself capable of so doing when such were fitted. Mr. Horner concludes by saying there is a great deal to be learnt from such a type of model—a remark with which we quite agree—he then asks: why does it seem so unpopular? Earlier on in his communication Mr. Horner says:

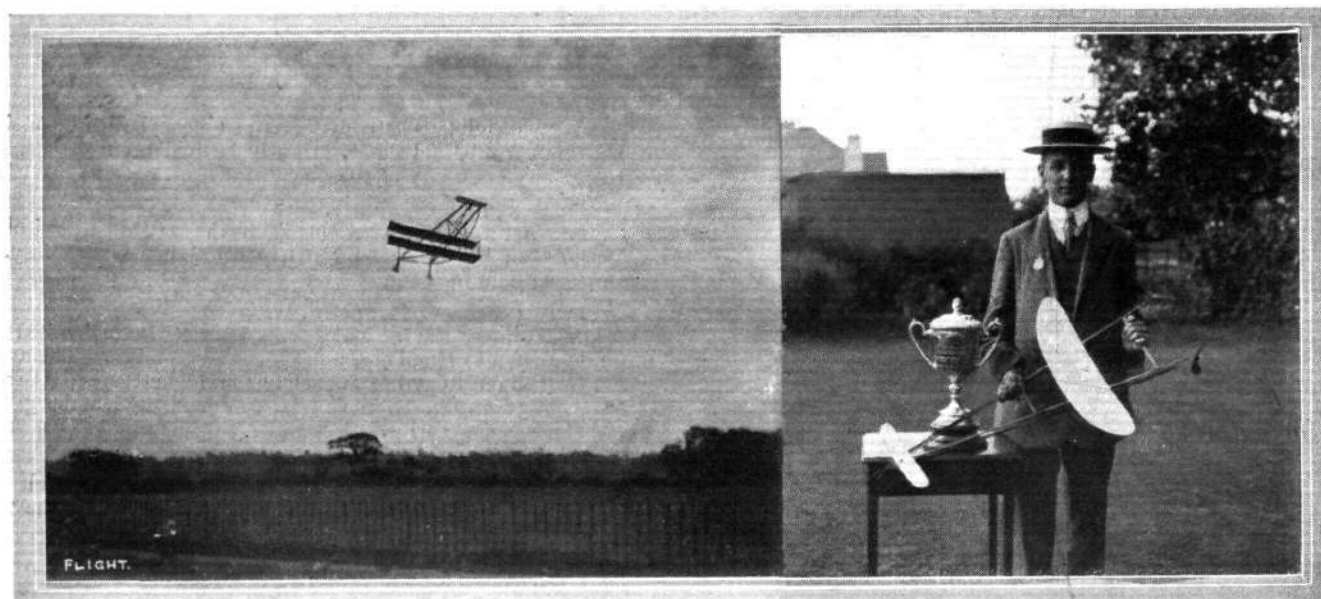
seller, in Mr. E. T. Simpson's model Blériot recently described in FLIGHT.

## Replies in Brief.

H. TURNER.—The address is Messrs. A. Causland and Co., 3, Mitchell Street, Glasgow; price 4d. per lb.

H. VANDYCK.—We regret the photo sent is not sufficiently clear for reproduction.

G. BUTLER.—The suggestion which you make has been tried on more than one occasion. The matter was not confined to aviation, but dealt with models generally—the results save in one case were disastrous financially, and are not likely, we should think, to be tried again for some time.



Mr. A. B. Clark's model biplane in full flight. On the right, the winner, Mr. R. B. C. Noorduyn, of the Gamage Challenge Cup, 1912, distance 630 yards. The trophy and the winning machine are also shown in our photograph.

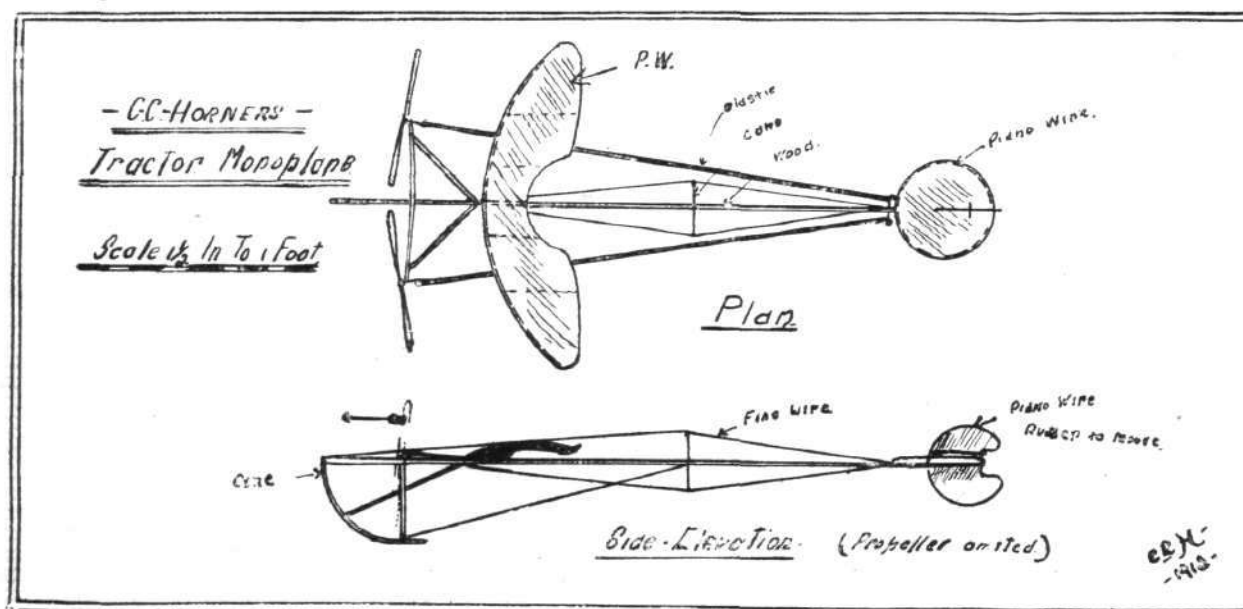
"although the model has flown perfectly well—as you know this type of model is far more difficult to deal with." It appears to us that Mr. Horner has answered his query previous to having asked it.

## Rule for Rubber Motors.

Mr. W. P. Dean sends the following beautifully simple rule—so far as it goes—relative to size of propellers and number of rubber strands; rubber  $\frac{1}{4}$ -in. flat:—4-in. propellers require 4 strands;

R. BAGLEY.—In reply to your queries: (1) Try a 10-in. diameter centrale type—if you could use a 12 in. it would be better. (2) Two cogs equal size—as small as possible, one fitted to propeller shaft. (3) In weight about one quarter total weight of machine—let the strands be as long as the fuselage permits. (4) Yes—leave it alone.

L. S. LATHROP.—The motor of which you have been so good as to send particulars appears very similar to the usual type of CO<sub>2</sub> rotary motor. Personally we consider the stationary in actual



Mr. C. C. Horner's tractor monoplane.

6-in., 6 strands; 8-in., 8 strands; 10-in. 10 strands; and so on up to 14-in. propellers. We shall be glad to hear whether our readers agree on this point.

## Query.

Mr. W. Adams desires to know the duration, the r.p.m. and the kind of propeller, and the number of turns given to the pro-

practice to give quite as good result—both Mr. H. H. Groves and Mr. Desoutter's are non-rotary—the former has a rotary valve, thus doing away with the use of all eccentrics, &c., the latter is of the usual type, but even in this case the power developed is ample. In the account you send there is no mention of any hot-water cylinder, absolutely a necessity when using a CO<sub>2</sub> motor; by this



we mean that some form of heating arrangement must be provided to overcome the freezing difficulty.

The one great advantage, of course, that a CO<sub>2</sub> plant possesses over a flash boiler type from the ordinary amateur's point of view, is ease in manipulation. In the hands of an expert, the flash boiler

type is superior; but it needs an expert more or less to manipulate it successfully, whereas the other does not. Also, there is no risk of setting anything—such as a haystack, &c.—on fire; although, so far as the last-mentioned is concerned, we are prepared to take the risk.

## THE KITE AND MODEL AEROPLANE ASSOCIATION. OFFICIAL NOTICES.

### British Model Records.

Hand-launched	Distance ...	A. E. Woollard	477 yards.
	Duration ...	A. F. Houlberg	89 secs.
Off ground	Distance ...	F. W. Jannaway	84 yards.
	Duration ...	G. Rowlands	30 secs.

Competitions.—On Bank Holiday, August 5th, three judges attended the kite and model competitions at Littlehampton. The competitions were held under the rules and regulations of the association, and were arranged by the Littlehampton entertainment committee. Results were as follows:—Senior Kite Competition.—1. Capt. Bateman, 210 marks; 2. Mr. C. A. Bernard, 140. Junior Kite Competition.—1. J. Sharpe, 165 marks; 2. Mercy V. Green, 95; 3. W. Dillon, 68. Consolation prize awarded to Miss E. Pearson, who was flying well, but was cut away by another competitor. Model Competition for Longest Flight.—1. H. Bate, Hove; 2. —; 3. Capt. P. This competition was not arranged by the committee till late in the week, otherwise there would have been a large entry from members of the association had notice been given of the same. The judges were Messrs. H. W. Browne, F. T. Pringuer and W. H. Akehurst. A display of kite flying by the three judges was given during the morning and afternoon, but the ship-to-the-shore display was postponed on account of no boat being able to put to sea, the motor boat races even having to be postponed.

Model Competition, on the 100 Acre Field, Greenford, August 24th, at 3 o'clock. Junior distance competition (open to the world). Free to members; non-members, entrance fee, 1s. 6d. Prizes: 1st, £1 1s., presented by C. Ridley, Esq.; 2nd, Mann monoplane, presented by Messrs. Mann and Grimmer; 3rd, bronze medal, presented by the Kite and Model Aeroplane Association. Rules: 1. Competitors may submit models of any kind. 2. Models must not weigh less than 4 ounces. 3. Competitors must be at the judges' flag at 2.45. Those not present at that time will be disqualified. 4. Reasonable repairs will be allowed at the discretion of the judges. 5. Models may be started by hand, or in any other manner. 6. Each competitor is entitled to three trials, if time permits. 7. The length of flight will be measured in a straight line, from starting point to alighting point, and not along the line of flight. 8. In this competition each competitor must obtain the signature of some responsible person who knows that the model has been made throughout by the competitor, including propellers. Junior duration competitions for models made by competitors, age 16 and under. Free to members; non-members, entrance fee, 1s. 6d. Prizes: 1st, £1 5s.; 2nd, 15s.; 3rd, 10s. Rules: 1. Competitors must be at the judges' flag at 2.30 p.m. Any competitor not present at that time will be disqualified. 2. Models must not weigh less than 4 ounces. 3. Competitors will be allowed to make reasonable repairs at the discretion of the judges. 4. Models must be launched by hand.

- Models to be timed from time of starting till they land or disappear from judges' view. In awarding prizes, originality of design will be considered.
- Each competitor is entitled to three trials, if time permits.
- Competitors may submit models of any kind, provided they are their own work throughout.
- In this competition each competitor must obtain the signature of some



The "Aerial B 20" biplane, winner of the Wakefield Cup, July 25th, 1912.

responsible person who knows that the model has been made throughout by the competitor, including propellers. Neither the Kite and Model Aeroplane Association or National Aviation Co. will be responsible for any damage done by or to models.

27, Victory Road, Wimbledon.

W. H. AKEHURST, Hon. Sec.

## PROGRESS OF FLIGHT ABOUT THE COUNTRY.

Model Clubs: Name of District only given. In brackets: Secretary's address.

Notes regarding Clubs must reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.

### Aero-Models Assoc. (N. Branch) (15, HIGHGATE AVENUE, N.).

LAST Saturday, at Finchley, B. Brown secured best duration with flight 51½ secs., H. E. Fletcher, second, with 41 secs. High flights with tractors by Messrs. F. G. Hindsley and B. Brown (180 yards). Rules governing competitions and the Enfield Challenge Cup can be obtained on application to secretary. Flying Saturday, at Finchley, includes impromptu tractor contest.

### Birmingham Aero Club (8, FREDERICK ROAD, EDBASTON).

HIGH wind Bank Holiday. Model gliding contest won by Mr. King, with 69 yards. Result inter-club contest: 1st, Birmingham, Trykle, 52 secs.; J. E. Overton, 49½ secs.; McManus, 35 secs.; Wood, 32 secs.; Wilde, 5½ secs.; average, 34.8 secs. 2nd, Coventry, Austin, 43 secs.; Shorter, 42 secs.; Haselock, 35 secs.; Rice, 20 secs.; Riley, 8 secs.; averages, 29.6 secs. 3rd, Worcester. The Worcester members left before club contest, but Messrs. Colton and Smith flew for the club and made an average of 24.3 secs. The London clubs were unable to turn up for the occasion. Some good flights were made with the monoplane glider constructed by the junior section of the club.

### Bristol & West of England (CLIFTON DOWN HOTEL, CLIFTON).

At inaugural meeting at clubroom, July 31st (Mr. R. V. Tivy in chair), the following officers and committee were elected: Hon. Sec., R. V. Tivy. Assistant Hon. Sec., R. M. Haines. Committee, A. E. Pearce, N. W. Edgar, W. A. Smallcombe. Members of model section are competing in competition at Bath, August 10th. The first competition of the section will be held at Penpole Point, Shirehampton (prize for longest duration glide), August 17th, at 3.30 p.m.

### Croydon and District Aero Club (Sec., 158, HIGH STREET).

RESULTS distance trials, Wimbledon Common, Bank Holiday: C. Smith, 588 yards; D. Pavely, 520; H. Smith, 420; P. Hart, 380, and W. Bell, 376. Others flying: Messrs. W. Bell, Roden, F. Carter (65 secs.), Sanders, Mr. Carter. Flying Sunday at Wimbledon, and Saturday at Duppas Hill.

### Hackney and District (THE HOLLIES, JENNER ROAD, N.).

SATURDAY last Mr. Louch broke club duration record with 105 secs., with 2½ oz. (1-1-0 P2) model. Mr. Louch wishes to challenge any model flyer in the London district to a contest, the conditions of which to be settled according to agreement. Other official durations: Carter, 76 secs.; Dore, 52.5; Marmin, 44; Horsfield, 44; Vans, 37 (1-1-0 P1).

### King and Queen See Hydro-Aeroplane Flight.

ALTHOUGH the strong wind rendered flying out of the question during the greater part of the day on Wednesday at Cowes, Mr. Claude Grahame-White was able to make a flight on his hydro-aeroplane shortly after six o'clock. He first flew along the esplanade, then over the yachts at anchor, circling over the Royal yacht, this manoeuvre being watched by Their Majesties the King and Queen.

### Leytonstone and Districts Aero Club (64, LEYSRING ROAD).

WILL those interested in model aeroplanes, &c., please try and attend a meeting on 14th of August, 8 p.m.?

### Reigate, Redhill & District ("THE COTTAGE," LADBROKE RD.).

BANK Holiday at South Nutfield, before 2,000 spectators. Wind up to 40 m.p.h. Flying by Lewis, Norton, Purghope, Norris, Sutton, Osborne, Jordan, Greenhead, and Welch, Norton's self riser off canvas sheet, and Lewis and Burghope out across country, latter at 150 ft. Same three, with "sparklers," at dusk. Lectures arranged for novices.

### Scottish Ae.S. Model Aero Club (6, McLELLAN STREET, GOVAN).

FLYING at Paisley Racecourse, Saturday, by Messrs. Foster ("Gordon" mono.) and Gordon ("Gordon" racer mono.), also a new member with "Mann" monoplane. To-day (Saturday), hydro-aeroplane-meeting at pond, Whiteinch Park, at 3.15 p.m. August 17th, distance and duration, at Paisley Racecourse, at 3.15 p.m. The club has secured first-class workshop premises at 10, Holland Street, off St. Vincent Street, Glasgow. These will be fitted out with the usual wood working tools, also a "Drummond" lathe has been procured for the use of model motor makers. The tools, &c., will be delivered next week, and it is hoped to have the workshop in full swing by the commencement of the new session in September. New members are cordially invited; yearly subscriptions, 7s. 6d.; juniors, under 17 years, 4s. The hon. sec., Mr. W. Foster, "Rochelle," Limeside Avenue, Rutherglen, Glasgow, will be very pleased to answer all enquiries regarding the club. A first-class programme is being considered, and it is hoped that there will not be one dull week throughout the coming winter.

### Stony Stratford and District Aero Club (OLD STRATFORD).

EXHIBITION of models, kites, and accessories, at Wolverton Flower Show, August 17th. Particulars of entries not later than August 15th. In the loan section two or three model accessory makers have promised support. Other clubs are invited to contribute to this section.

### Windsor Model Flying (10, ALMA ROAD, WINDSOR).

BANK Holiday, Barton broke tractor club record, with 100 yards, Camm, with twin propeller machine, got 50 secs. record. Flying Saturday and Wednesday in Home Park.

The pilot then steered his machine as closely as possible past the Royal Yacht Squadron, so that the members attending the garden party might have a good view of it.

### Berlin-St. Petersburg Flight.

AFTER several delays, due to motor trouble, Abramovitch, with his passenger, succeeded in getting to St. Petersburg on Tuesday evening.

## CORRESPONDENCE.

Correspondents communicating with regard to letters which have appeared in FLIGHT, would much facilitate ready reference by quoting the number of each letter.

### Flexible Wings and Stability.

[1607] From time to time I have read that owing to the flexibility of planes, lateral balance becomes more or less automatic. Why then cannot one make each wing of a monoplane hinge on its front spar, and then interconnect the trailing edges with steel cables over pulleys, so that when one increases its angle of incidence the other decreases in a like proportion. The control could still be arranged to be interrupted by the pilot, as, for instance, when banking to turn a corner, as otherwise I presume the machine would turn on an even keel laterally. Some years ago, in 1908, I and a friend designed a double monoplane on this principle, but not only embodying the above method of lateral stability by interconnecting the trailing edges of the two halves of each plane, but also using the same plan to secure longitudinal stability by interconnecting the trailing edges as a whole of the two main planes of the double monoplane. In this way, as the pressure on the front plane must always balance the pressure on the aft plane, we hoped to secure perfect stability under all conditions. I still fail to see any flaw in this method.

Lincoln's Inn Fields.

JOHN V. L. HALL.

### Automatic versus Inherent Stability.

[1608] Mr. Earle Ovington claims much respect for his courage and capacity as a pilot, and he has greatly interested and pleased many by his recent description in FLIGHT of his methods of handling a Blériot monoplane. But I do not think he is quite so happy in his remarks on automatic stability. He does not think that the aviator should "have to trust his life at all times to the proper operation of a series of mechanical devices," apparently overlooking that the whole system of the aeroplane is built up of a series of mechanical devices, partly automatic, to which, each time that the pilot flies, he is compelled to trust his life; and it is quite true that "there is no discussing the question that sooner or later this automatic mechanism would refuse to 'automat,' though it is not so certain that when this occurs 'sure death' would be the result."

The chief automatic device in the aeroplane system is the engine, and it is scarcely to be argued that it is better for the pilot to keep turning the propeller to enable himself to fly than for the engine to save him this fatigue because "this automatic mechanism would refuse to 'automat' sooner or later." When this occurs with Mr. Ovington, "sure death" is not the result. He knows how to deal with it, as he very clearly describes in his recent article. Should an automatic stability mechanism fail, why should not Mr. Ovington be able to deal with the situation similarly.

Automatic stability may be obtained by an adjustment of certain parts of the known aeroplane, which, during flight, shall permit of relative movement between those parts, producing balancing effects. Automatic stability is then synonymous with inherent stability, though the latter, somewhat narrowly, is usually considered to be obtained by means of a certain formation and disposition of the wing surfaces. Automatic mechanism, extraneous to the known aeroplane parts, adds weight, complexity and cost, without equal efficiency.

When the wonderful automata of the world are remembered and considered—one of the chief being the internal-combustion engine—the construction of an aeroplane which shall be a perfect automaton, in respect of its aerial balance, seems comparatively easy. Such an aeroplane is a crying necessity. With the present type of machine, the strongest-nerved, most intelligent, and ready-witted pilot, may make a mistake, and pay for it with his life, as is being proved too often. Civilised Governments, now compelled to the use of the aeroplane, have the power to secure machines of a safer type and so eliminate avoidable peril to their pilots. It is a reproach to our own Government, the Government of the most enlightened and humane nation in history, that they are doing nothing in this direction.

The aeroplane, in its present form, as a pilot controlled machine, has reached its zenith, and the only possible advance is in the direction of automatic stability which alone can make flying as free from danger as any other method of artificial locomotion, and subordinate it to the general service of mankind. It is useless to assert, without proof, that it is impossible to produce a machine endowed with this quality. Experiment may prove the contrary with one certain result, the lives of some of the bravest and best of the servants of the State would be no longer unduly hazarded. Seeing that this may be so, blame cannot attach to the assertion that it is the duty of the Government, at all costs, to undertake the necessary experiments to put so vital a matter to the proof.

Mr. Ovington may have done a great service in again calling

attention to this subject, which is, in the opinion of the advocates of automatic stability, rightly described by him as "one of the greatest in importance of the present day."

Haywards Heath.

L. BEAUCLERC GOLDMAN.

### Side-Slips.

[1609] Noting "Cruiser Squadron's" letter on side-slips, it might be opportune to mention a few facts of Mr. Brereton's accident at Malton last Thursday.

When flying at an altitude of about 400 ft. his machine suddenly, without the slightest warning, listed over to the right until the planes were very nearly vertical. The machine then dived vertically nose first downwards, and when only about 20 ft. from the ground took its normal position flying onwards for about 600 yards, and finally landed, quite normally, in a cornfield. The corn, however, wrapped round the chassis and pulled the machine up so quickly that it turned over.

Mr. Brereton afterwards stated that it was remarkable the machine did not side-slip, and in a desperate effort pushed over his control-wheel to the right, and at the same time turned his wheel clockwise, and also lifted his lever to depress the elevator. These movements were done simultaneously, causing full warp on the planes and the machine to dive. The main point to note in these movements is that the elevator acted as the rudder, and the rudder as the elevator to dive the machine down. This descent was alarming, but Mr. Brereton was able to flatten his machine out only 20 ft. from the ground, and avoid what all the spectators were certain would be a fatal accident.

The only cause which could be attributed to the machine listing over so suddenly was the extreme heat and thundery condition of the atmosphere, causing a great decrease of pressure under one plane only by his having encountered an air pocket with this plane.

per pro THE BLACKBURN AEROPLANE CO.  
R. BLACKBURN.

### Aeronautical Patents Published.

Applied for in 1911.

Published August 8th, 1912.

- 13,997. M. J. VEREY. Flying-machine.
- 16,733. A. K. LOW. Aeroplanes.
- 22,322. H. G. MELLV. Holding-back and releasing flying-machines.
- 27,831. J. M. E. DE BUCY. Aerial screw-propeller system for boats.
- 28,305. SOC. ANON. DES. AEROPLANES "LA MOUETTE." Aeronautical machines.

Applied for in 1912.

Published August 8th, 1912.

- 2,154. A. MATTANI. Aerial machines.
- 2,342. A. W. DE MEIR. Aeronautical safety suits or garments.
- 6,121. J. LE PLAIN. Direction indicators.

### PRINCIPAL CONTENTS.

	PAGE
Editorial Comment ...	718
An Arch-Disciple of Flight.	
Aviators and the Army Manœuvres.	
The Army Trials and some Reflections. By Our Technical Editor	720
The Military Competitions. By Our Special Correspondent...	726
The Military Competitions. The Machines	728
Royal Aero Club Official Notices	729
Mr. Lindsay Campbell's Accident	729
From the British Flying Grounds	730
British Notes of the Week	732
Flying at Hendon	733
Foreign Aviation News	734
Airship News	735
Models. Conducted by V. E. Johnson, M.A.	735
Kite and Model Aeroplane Association	737
Progress of Flight about the Country	737
Correspondence...	738

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